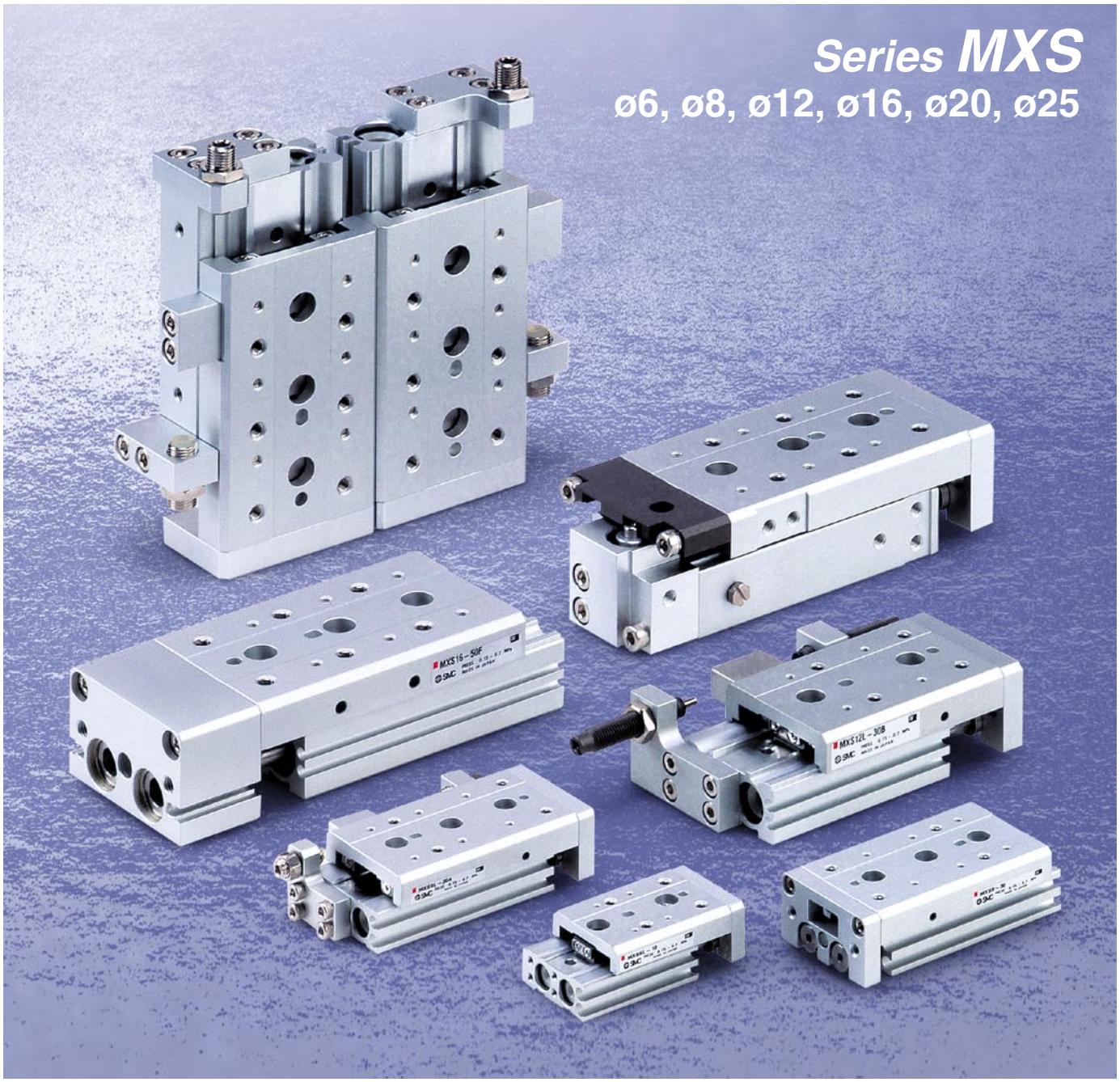
CAT.EUS20-70 F-UK

SMC

Air Slide Table



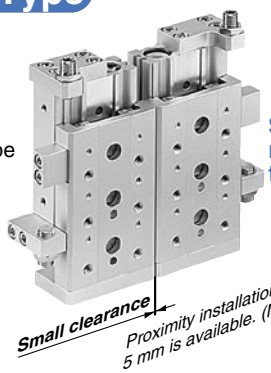
Work table and air cylinder are compactly integrated.

Air slide table is suited for precision assembly.

Symmetric Type

Port location and stroke adjuster position are in opposite places from the standard body.

Standard type



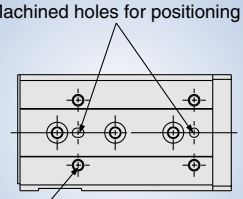
Sym-metric type

Small clearance

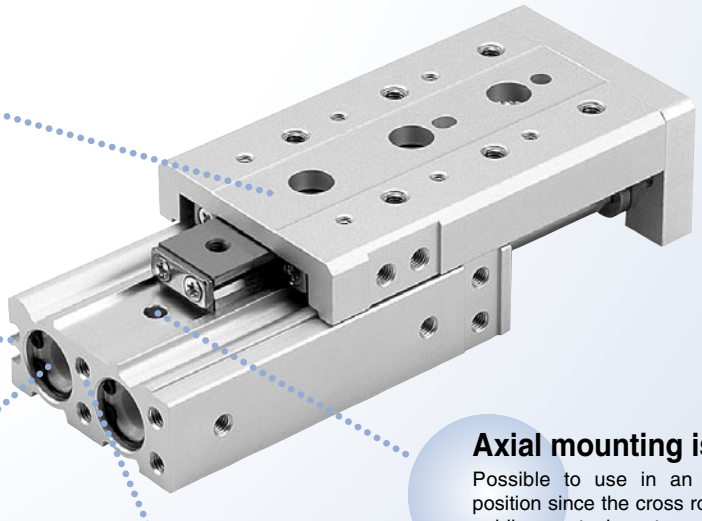
Proximity installation of up to 5 mm is available. (MXS6)

Improved workpiece mounting repeatability

Machined holes for positioning



Thread for work mounting
Helisert is used for improved strength.



Flush mountable auto switches

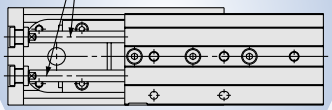
An auto switch installed in the groove of the housing body is flush with the surface.

Axial mounting is possible.

Possible to use in an axial mounting position since the cross roller guide in the guiding parts is not properly preloaded and does not use a holding device.

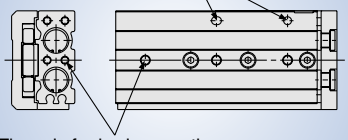
Dual piston rod

The dual piston rod ensures twice the thrust of the current cylinder.



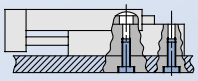
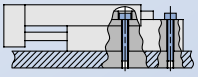
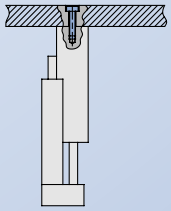
Body mounting

Machined holes for positioning



Threads for body mounting

Mounting is possible from 3 directions.

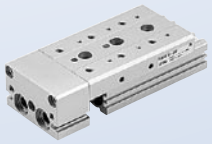
1. Lateral mounting (Body tapped)	2. Lateral mounting (Body through-hole)	3. Vertical mounting (Body tapped)
		

Wide variety of options

Adjuster option and function option can be combined.

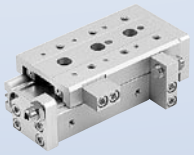
■ Functional options

With buffer mechanism

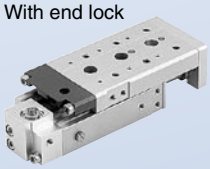


■ Adjuster options

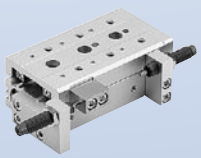
With stroke adjuster



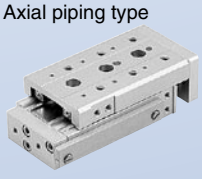
With end lock



With shock absorber

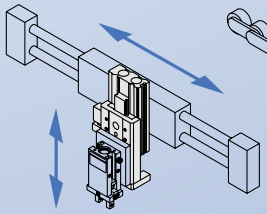


Axial piping type

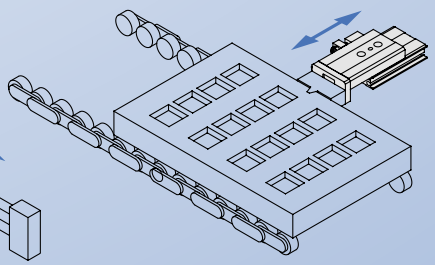


Application examples

As X-axis for picking and placing



For positioning pallets on a conveyor



Series Variations

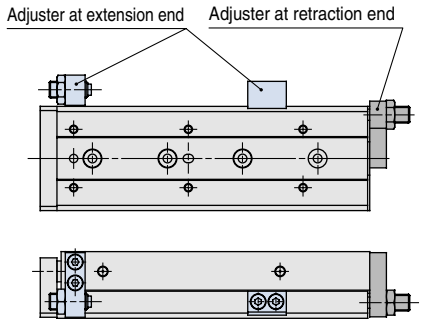
Model	Bore size (mm)	Standard stroke (mm)	Adjuster options: Stroke adjuster	Adjuster options: With shock absorber (Except for ø6)	Functional options	Auto switch
MXS 6	6	10 20 30 40 50 75 100 125 150	Extension end	With buffer	With buffer	Reed switch • D-A9□ • D-A9□V Solid state switch • D-M9□ • D-M9□V 2-colour indication solid state switch • D-M9□W • D-M9□WV
MXS 8	8		Retraction end	With end lock (Except for ø6)	With end lock (Except for ø6)	
MXS12	12		Both ends	Axial piping type	Axial piping type	
MXS16	16					
MXS20	20					
MXS25	25					

Adjuster Options

Stroke Adjuster

■ Adjustable stroke range: 0 to 5 mm

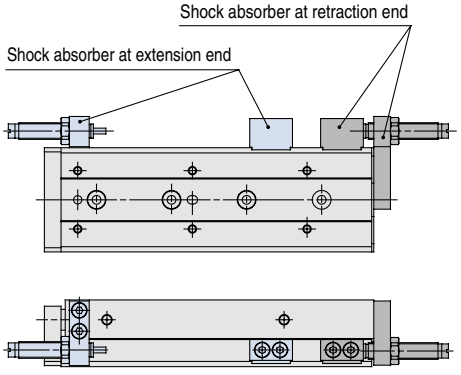
With adjuster at extension end (AS)
With adjuster at retraction end (AT)
With adjuster at both ends (A)



With Shock Absorber

■ Absorbs the collision at stroke end and stops smoothly.
■ Enables adjustment of stroke

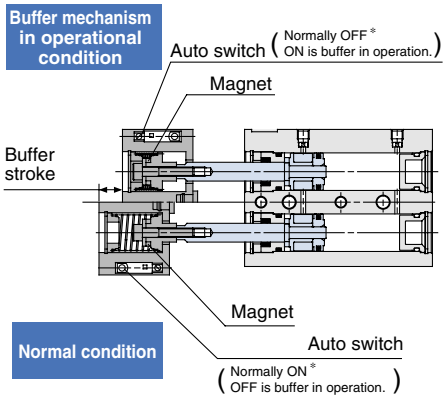
With shock absorber at extension end (BS)
With shock absorber at retraction end (BT)
With shock absorber at both ends (B)



Functional Options

With Buffer Mechanism

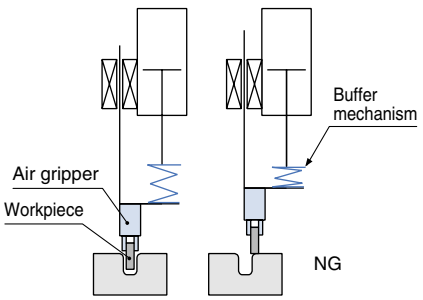
■ Protects workpieces and tools, etc., by eliminating impact at the end of the extension stroke.
■ Buffer unit is auto switch capable.



* The normally ON/OFF setting is changed by changing the mounting direction of the auto switch.

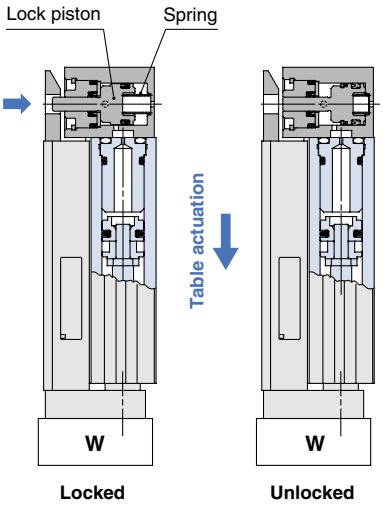
Application Example

Buffer mechanism absorbs shock and prevents damage to the workpiece in case the positioning is not accurate when a load is inserted.



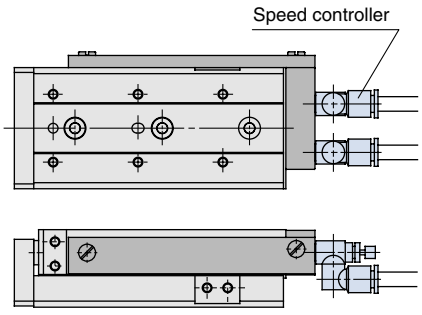
With End Lock

■ Holds the cylinder's home position to prevent the workpiece from dropping even if the air supply is cut off.



Axial Piping Type

■ Centralised piping in axial direction to maintain clear space around the body.



Series MXS

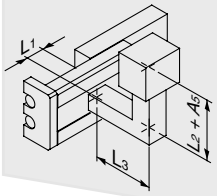
Model Selection

Model Selection Steps	Formula/Data	Selection Examples

1 Operating Conditions

List the operating conditions considering the mounting position and workpiece configuration.

- Model to be used
- Type of cushion
- Workpiece mounting position
- Mounting orientation
- Average speed Va (mm/s)
- Load weight W (kg): Fig. (1)
- Overhang Ln (mm): Fig. (2)



Cylinder: MXS16-50
Cushion: Rubber bumper
Workpiece table mounting
Mounting: Horizontal wall mounting
Average speed: Va = 300 [mm/s]
Load weight: W = 1 [kg]
L_1 = 10 mm
L_2 = 30 mm
L_3 = 30 mm

2 Kinetic Energy

Find the kinetic energy E (J) of the load.

Find the allowable kinetic energy Ea (J).
Confirm that the kinetic energy of the load does not exceed the allowable kinetic energy.

$$E = \frac{1}{2} \cdot W \left(\frac{V}{1000}\right)^2$$

Collision speed $V = 1.4Va$ *

*) Correction factor (Reference values)

Ea = K·Emax
Workpiece mounting coefficient K: Fig. (3)
Max. allowable kinetic energy Emax: Table (1)
Kinetic energy (E) ≤ Allowable kinetic energy (Ea)

$$E = \frac{1}{2} \cdot 1 \left(\frac{420}{1000}\right)^2 = 0.088$$

V = 1.4 x 300 = 420
Ea = 1 x 0.11 = 0.11
Can be used based on E = 0.088 ≤ Ea = 0.11

3 Load Factor

3-1 Load Factor of Load Weight

Find the allowable load weight Wa (kg).
Note) There is no need to consider this load factor in the case of using perpendicularly in a vertical position.
(Define $\alpha_1 = 0$.)

Find the load factor of the load weight α_1.

Wa = K·β·Wmax
Workpiece mounting coefficient K: Fig. (3)
Allowable load weight coefficient β: Graph (1)
Max. allowable load weight Wmax: Table (2)

$\alpha_1 = W/Wa$

Wa = 1 x 1 x 4 = 4
K = 1
β = 1
Wmax = 4

$\alpha_1 = 1/4 = 0.25$

3-2 Load Factor of Static Moment

Find the static moment M (N·m).

Find the allowable static moment Ma (N·m).

Find the load factor α_2 of the static moment.

M = W x 9.8 (Ln + An)/1000
Correction value of moment centre position distance An: Table (3)

Ma = K·γ·Mmax
Workpiece mounting coefficient K: Fig. (3)
Allowable moment coefficient γ: Graph (2)
Maximum allowable moment Mmax: Table (4)

$\alpha_2 = M/Ma$

Yawing
Examine My.
My = 1 x 9.8 (10 + 30)/1000 = 0.39
A_3 = 30

May = 1 x 1 x 15.9 = 15.9
Mymax = 15.9
K = 1
γ = 1

$\alpha_2 = 0.39/15.9 = 0.025$

Rolling
Examine Mr.
Mr = 1 x 9.8 (30 + 10)/1000 = 0.39
A_6 = 10

Mar = 15.9 (Same value as May)

$\alpha'_2 = 0.39/15.9 = 0.025$

3-3 Load Factor of Dynamic Moment

Find the dynamic moment Me (N·m).

Find the allowable dynamic moment Mea (N·m).

Find the load factor α_3 of the dynamic moment.

$$Me = 1/3 \cdot We \times 9.8 \frac{(Ln + An)}{1000}$$

Collision equivalent to impact We = ∂·W·V
δ: Bumper coefficient
With urethane bumper (Standard) = 4/100
With shock absorber = 1/100
Correction value of moment centre position distance An: Table (3)

Mea = K·γ·Mmax
Workpiece mounting coefficient K: Fig. (3)
Allowable moment coefficient γ: Graph (2)
Max. allowable moment Mmax: Table (4)

$\alpha_3 = Me/Mea$

Pitching Examine Mep.

$$Mep = 1/3 \times 16.8 \times 9.8 \times \frac{(30 + 10)}{1000} = 2.2$$

We = 4/100 x 10 x 420 = 16.8
A_2 = 10
Meap = 1 x 0.7 x 15.9 = 11.1
K = 1
γ = 0.7
Mpmax = 15.9

$\alpha_3 = 2.2/11.1 = 0.20$

Yawing Examine Mey.

$$Mey = 1/3 \times 16.8 \times 9.8 \times \frac{(30 + 31)}{1000} = 3.3$$

We = 16.8
A_4 = 31
Meay = 11.1 (Same value as Meap)

$\alpha'_3 = 3.3/11.1 = 0.30$

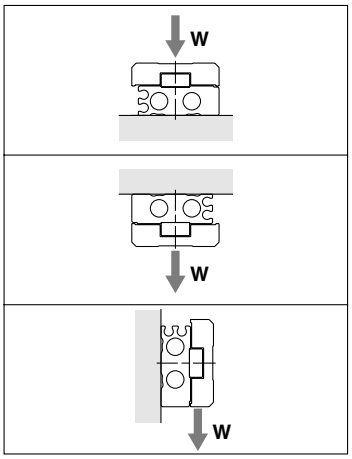
3-4 Sum of Load Factors

Possible to use if the sum of the load factors does not exceed 1.

$\Sigma\alpha n = \alpha_1 + \alpha_2 + \alpha_3 \leq 1$

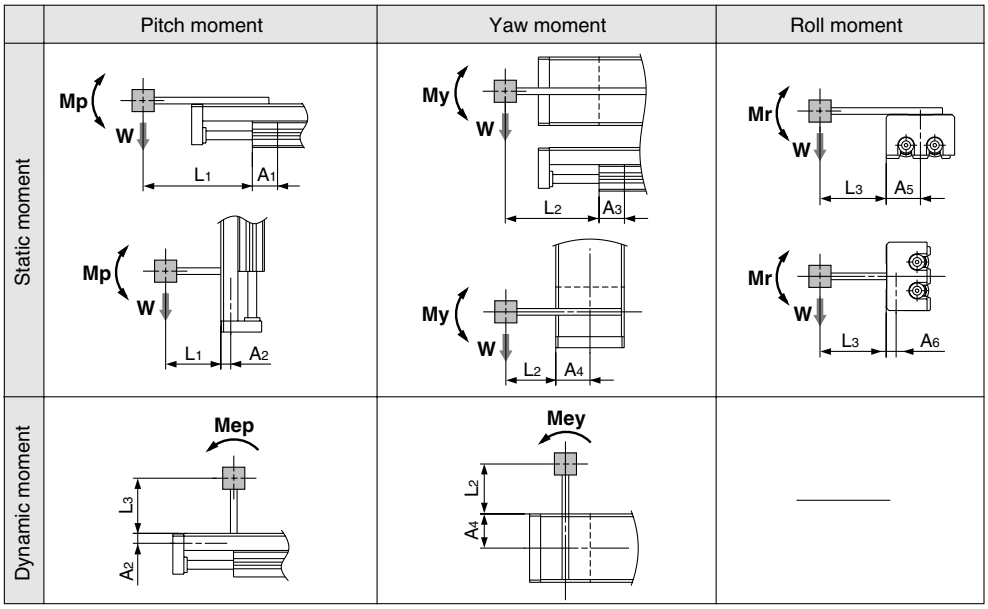
$\Sigma\alpha n = \alpha_1 + \alpha_2 + \alpha'_2 + \alpha_3 + \alpha'_3$
$= 0.25 + 0.025 + 0.025 + 0.20 + 0.30 = 0.80 \leq 1$
And it is possible to use.

Fig. (1) Load Weight: W (kg)



Note) There is no need to consider this load factor in the case of using perpendicularly in a vertical position.

Fig. (2) Overhang: Ln (mm), Correction Value of Moment Centre Position Distance: An (mm)



Note) Static moment: Moment generated by gravity
Dynamic moment: Moment generated by impact when colliding with stopper

Fig. (3) Workpiece Mounting Coefficient: K

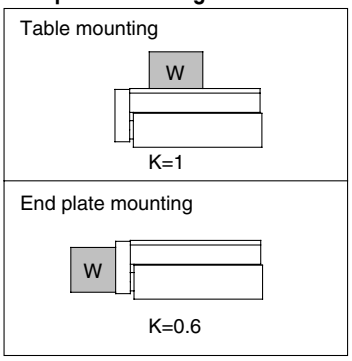


Table (1) Maximum Allowable Kinetic Energy: Emax (J)

Model	Allowable kinetic energy	
	Rubber bumper	Shock absorber
MXS6	0.018	—
MXS8	0.027	0.045
MXS12	0.055	0.11
MXS16	0.11	0.22
MXS20	0.16	0.32
MXS25	0.24	0.48

Graph (1) Allowable Load Weight Coefficient: β

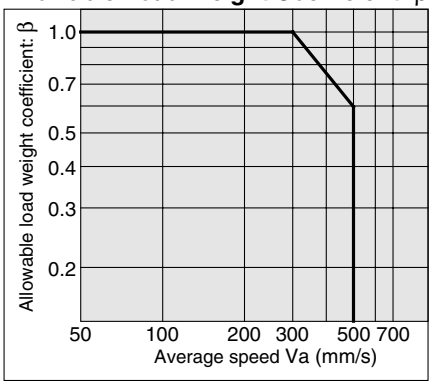


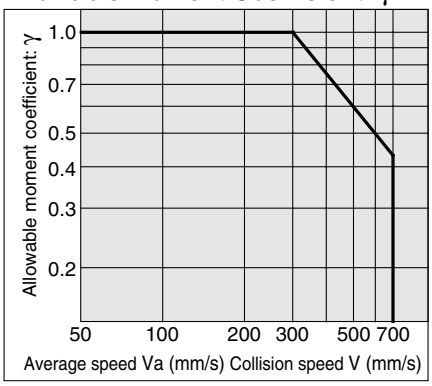
Table (2) Maximum Allowable Load Weight: Wmax (kg)

Model	Maximum allowable load weight
MXS6	0.6
MXS8	1
MXS12	2
MXS16	4
MXS20	6
MXS25	9

Table (3) Correction Value of Moment Centre Position Distance : An (mm)

Model	Correction value of moment centre position distance (Refer to Figure 2.)					
	A_1	A_2	A_3	A_4	A_5	A_6
MXS6	11	6	13	16	16	6
MXS8	11	7.5	13	20	20	7.5
MXS12	24	8.5	26	25	25	8.5
MXS16	27	10	30	31	31	10
MXS20	34	14.5	36	38	38	14.5
MXS25	42	19	44	46	46	19

Graph (2) Allowable Moment Coefficient: γ



Note) Use the average speed when calculating static moment. Use the collision speed when calculating dynamic moment.

Table (4) Maximum Allowable Moment: Mmax (N·m)

Model	Stroke (mm)								
	10	20	30	40	50	75	100	125	150
MXS6	0.7	1.0	1.2	1.2	1.2	—	—	—	—
MXS8	2.0	2.0	2.8	3.6	4.2	4.2	—	—	—
MXS12	4.2	4.2	4.2	5.8	7.0	10.0	10.0	—	—
MXS16	11.3	11.3	11.3	11.3	15.9	25.0	34.1	34.1	—
MXS20	19.4	19.4	19.4	19.4	27.2	35.0	50.5	50.5	50.5
MXS25	30.6	30.6	30.6	30.6	42.8	55.1	67.3	67.3	67.3

Symbol

Symbol	Definition	Unit	Symbol	Definition	Unit
An (n = 1 to 6)	Correction value of moment centre position distance	mm	**Va**	Average speed	mm/s
E	Kinetic energy	J	**W**	Load weight	kg
Ea	Allowable kinetic energy	J	**Wa**	Allowable load weight	kg
Emax	Max. allowable kinetic energy	J	**We**	Weight equivalent to impact	kg
Ln (n = 1 to 3)	Overhang	mm	**Wmax**	Max. allowable load weight	kg
M (Mp, My, Mr)	Static moment (Pitch, Yaw, Roll)	N·m	α	Load factor	—
Ma (Map, May, Mar)	Allowable static moment (Pitch, Yaw, Roll)	N·m	β	Allowable load weight coefficient	—
Me (Mep, Mey)	Dynamic moment (Pitch, Yaw)	N·m	γ	Allowable moment coefficient	—
Mea (Meap, Meay)	Allowable dynamic moment (Pitch, Yaw)	N·m	δ	Damper coefficient	—
Mmax (Mpmax, Mymax, Mrmax)	Max. allowable moment (Pitch, Yaw, Roll)	N·m	**K**	Workpiece mounting coefficient	—
V	Collision speed	mm/s			

Air Slide Table
Series MXS

How to Order

Air slide table **MXS** **12** **[ ]** — **50** **AS** **FR** — **M9N** **S**

Port thread type

-	M	ø6 to ø16
	Rc	ø20, ø25
TN	NPT	
TF	G	

Bore size (Stroke (mm))

6	10, 20, 30, 40, 50
8	10, 20, 30, 40, 50, 75
12	10, 20, 30, 40, 50, 75, 100
16	10, 20, 30, 40, 50, 75, 100, 125
20	10, 20, 30, 40, 50, 75, 100, 125, 150
25	10, 20, 30, 40, 50, 75, 100, 125, 150

Adjuster option

-	Without adjuster
AS	Adjuster on extension end
AT	Adjuster on retraction end
A	Adjuster on both ends
BS (1)	Absorber on extension end
BT (1)	Absorber on retraction end
B (1)	Absorber on both ends

Note 1) Options BS, BT and B are not available with the MXS6 series.

Functional option

-	Standard
F	With buffer
R (2)	With end lock
P	Axial piping type
FR (2)	With buffer and end lock
FP	With buffer, Axial piping type

Note 2) Option R is not available with the MXS6 series.

Auto switch

-	Without auto switch

∗ For the applicable auto switch models, refer to the table below. For the applicable auto switches for buffer, refer to page 22.

Number of auto switches

-	2 pcs.
S	1 pc.
n	"n" pcs.

Option Combinations

Functional option / Adjuster option	Nil	F	R	P	FR	FP
-	○	○	○	○	○	○
AS	○	○ (3)	○	○	○ (3)	○ (3)
AT	○	○	×	×	×	×
A	○	○ (3)	×	×	×	×
BS	○	×	○	○	×	×
BT	○	○	×	×	×	×
B	○	×	×	×	×	×

○: Available ×: Not available

Note 3) When the buffer mechanism and the stroke adjuster on extension end are combined, the buffer stroke will be shorter by the length adjusted by the stroke adjuster on the extension end.

Applicable Auto Switches/Refer to "SMC Best Pneumatics" catalogue for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length∗ (m)			Pre-wired connector	Applicable load	
					DC		AC	Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)			
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	**A93V**	**A93**	●	●	—	—	—	Relay, PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9NV**	**M9N**	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	○	○		
				2-wire		12 V		**M9BV**	**M9B**	●	●	○	○	—	
	Diagnostic indication (2-colour indication)			3-wire (NPN)		5 V, 12 V		**M9NWV**	**M9NW**	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PWV**	**M9PW**	●	●	○	○		
				2-wire		12 V		**M9BWV**	**M9BW**	●	●	○	○	—	

∗ Lead wire length symbols: 0.5 m····· Nil (Example) M9N
3 m····· L (Example) M9NL
5 m····· Z (Example) M9NZ

∗ Solid state switches marked with "○" are produced upon receipt of order.

• Since there are additional applicable auto switches than are listed, refer to page 31 for details.
• For details on auto switches with a pre-wired connector, refer to "SMC Best Pneumatics" catalogue.

Specifications

Bore size (mm)	6	8	12	16	20	25
Piping port size	M3	M5			Rc1/8, NPT1/8, G1/8	
Fluid	Air					
Action	Double acting					
Operating pressure	0.15 to 0.7 MPa					
Proof pressure	1.05 MPa					
Ambient and fluid temperature	–10 to 60°C					
Piston speed	50 to 500 mm/s					
Cushion	Rubber bumper (Standard, With stroke adjuster) Shock absorber (Optional)					
Lubrication	Non-lube					
Auto switch (Optional)	Reed switch (2-wire, 3-wire) Solid state switch (2-wire, 3-wire) 2-colour indication solid state switch (2-wire, 3-wire)					
Stroke length tolerance	$^{+1}_{0}$ mm					

Option

Adjuster options	With stroke adjuster	Extension end (AS)	Stroke adjustment range 0 to 5 mm
		Retraction end (AT)	
		Adjuster on both ends (A)	
	With shock absorber	Extension end (BS)	W/ shock absorber is not available with the MXS6 series.
		Retraction end (BT)	
		Absorber on both ends (B)	
Functional options	With buffer (F)		W/ end lock is not available with the MXS6 series.
	With end lock (R)		
	Axial piping type (P)		

* For details of adjuster and functional option, refer to “Optional Specifications” on pages 19 to 22.

Made to Order (For details, refer to page 32.)

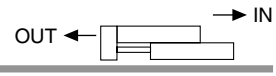
Symbol	Specifications
-X42	Anti-corrosive specifications for guide unit

For clean room specifications, refer to “Pneumatic Clean Series” catalogue.

Standard Stroke

Model	Standard stroke (mm)
MXS6	10, 20, 30, 40, 50
MXS8	10, 20, 30, 40, 50, 75
MXS12	10, 20, 30, 40, 50, 75, 100
MXS16	10, 20, 30, 40, 50, 75, 100, 125
MXS20	10, 20, 30, 40, 50, 75, 100, 125, 150
MXS25	10, 20, 30, 40, 50, 75, 100, 125, 150

Theoretical Output



The dual rod ensures an output twice that of existing cylinders. (N)

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm^2)	Operating pressure (MPa)					
				0.2	0.3	0.4	0.5	0.6	0.7
6	3	OUT	57	11	17	23	29	34	40
		IN	42	8	13	17	21	25	29
8	4	OUT	101	20	30	40	51	61	71
		IN	75	15	23	30	38	45	53
12	6	OUT	226	45	68	90	113	136	158
		IN	170	34	51	68	85	102	119
16	8	OUT	402	80	121	161	201	241	281
		IN	302	60	91	121	151	181	211
20	10	OUT	628	126	188	251	314	377	440
		IN	471	94	141	188	236	283	330
25	12	OUT	982	196	295	393	491	589	687
		IN	756	151	227	302	378	454	529

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm^2)

Weight

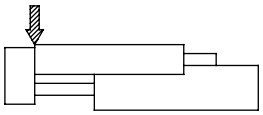
(g)

Model	Standard stroke (mm)									Additional weight of adjuster option				Additional weight of functional option		
										Rubber stopper		Shock absorber		With buffer	With end lock	Axial piping type S: Stroke (mm)
	10	20	30	40	50	75	100	125	150	Extension end	Retraction end	Extension end	Retraction end			
MXS6 (L)	80	100	115	155	180	—	—	—	—	10	5	—	—	30	—	13+0.15S
MXS8 (L)	150	160	190	235	285	410	—	—	—	15	9	35	45	40	40	26+0.17S
MXS12 (L)	325	325	325	385	480	660	890	—	—	30	20	50	60	80	90	43+0.21S
MXS16 (L)	570	570	580	640	760	1090	1370	1700	—	50	30	80	105	120	160	55+0.21S
MXS20 (L)	960	980	1010	1100	1250	1630	2150	2670	3190	100	71	170	205	140	310	166+0.45S
MXS25 (L)	1660	1680	1690	1840	2090	2650	3270	4140	4710	150	125	215	300	240	540	240+0.45S

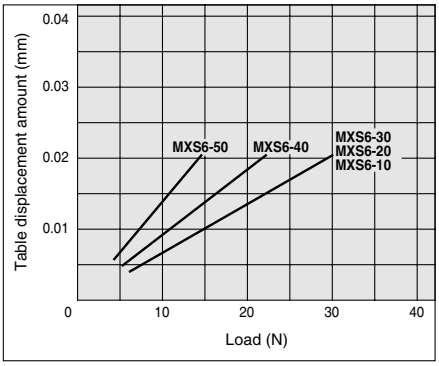
Table Deflection (Reference values)

Table displacement due to pitch moment load

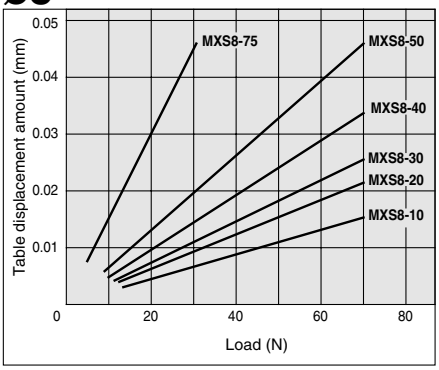
Deflection at the arrow mark when a load is applied to the arrow mark with the slide table fully extended.



ø6



ø8



ø12

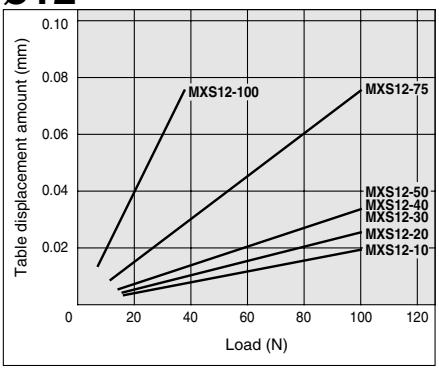
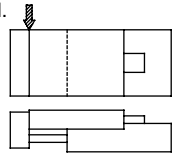
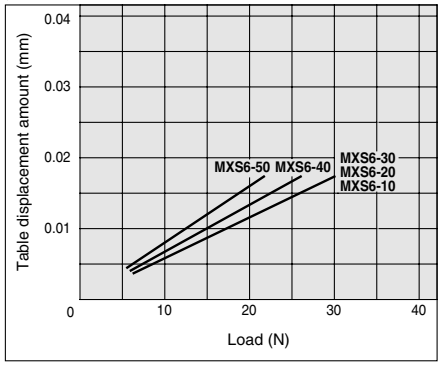


Table displacement due to yaw moment load

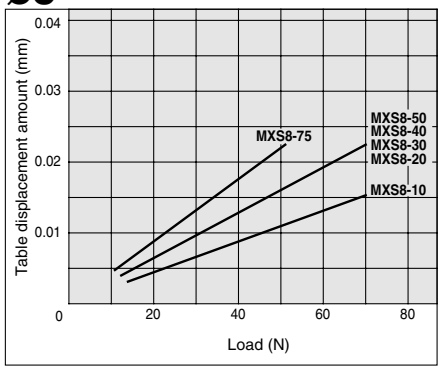
Deflection at the arrow mark when a load is applied to the arrow mark with the slide table fully extended.



ø6



ø8



ø12

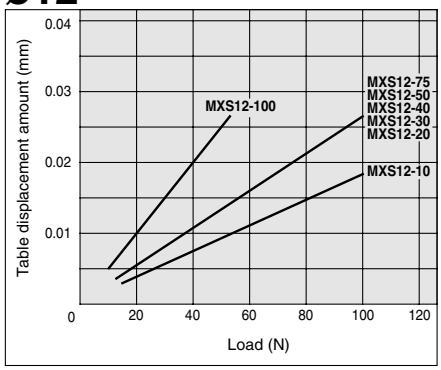
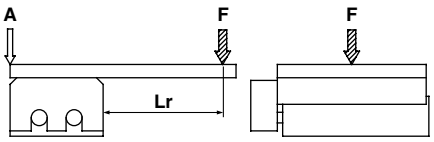
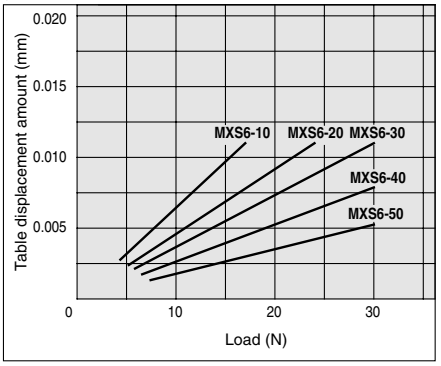


Table displacement due to roll moment load

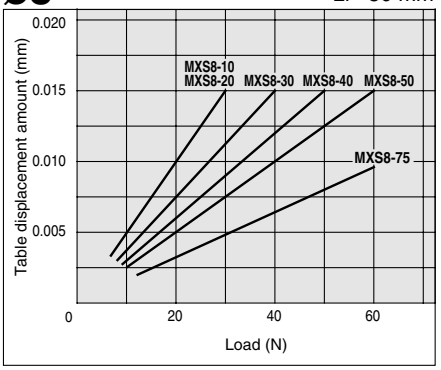
Displacement at “A” when a load is applied to “F” with the slide table retracted.



ø6 Lr=24 mm



ø8 Lr=50 mm



ø12 Lr=65 mm

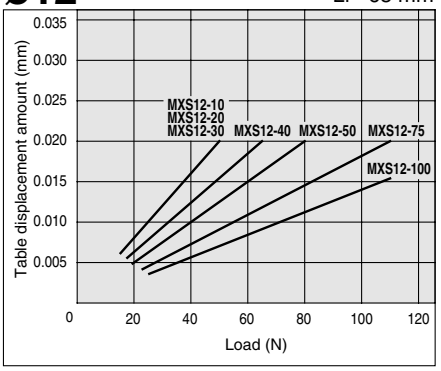
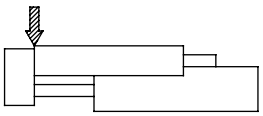
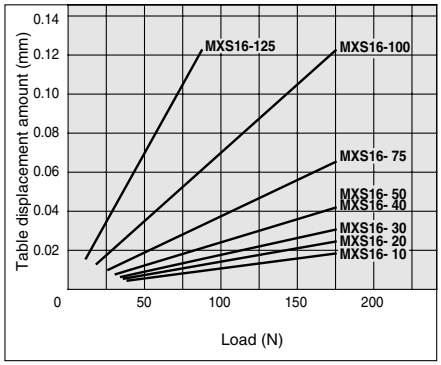


Table displacement due to pitch moment load

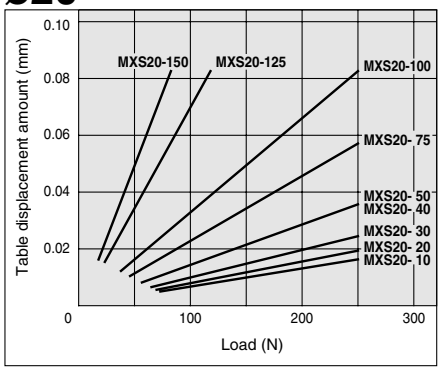
Deflection at the arrow mark when a load is applied to the arrow mark with the slide table fully extended.



ø16



ø20



ø25

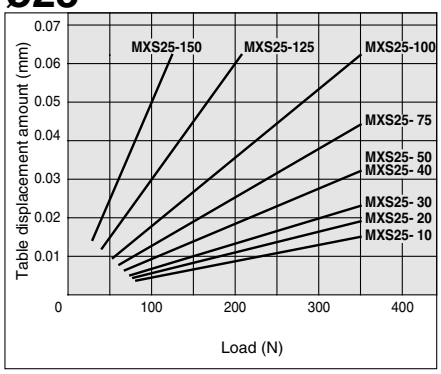
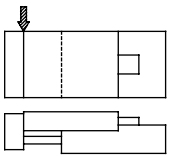
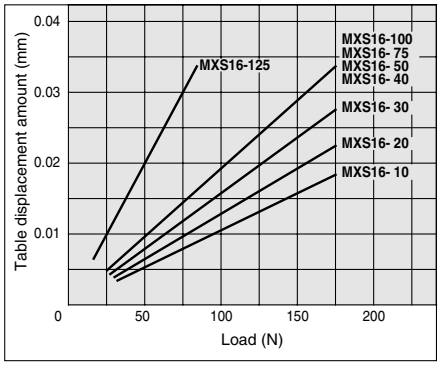


Table displacement due to yaw moment load

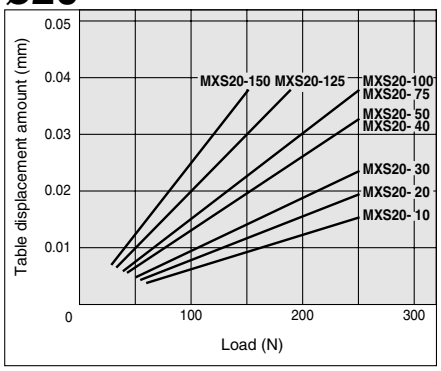
Deflection at the arrow mark when a load is applied to the arrow mark with the slide table fully extended.



ø16



ø20



ø25

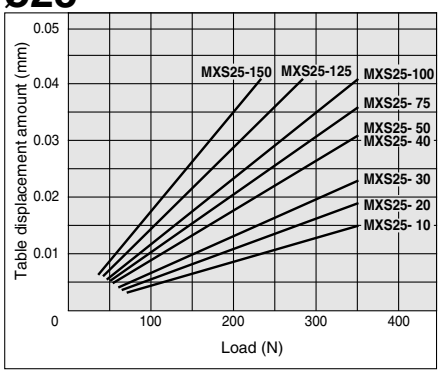
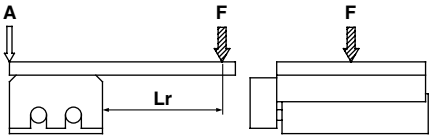
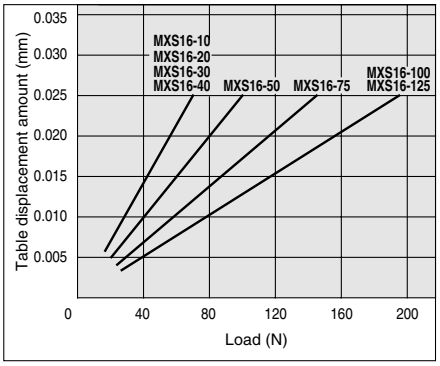


Table displacement due to roll moment load

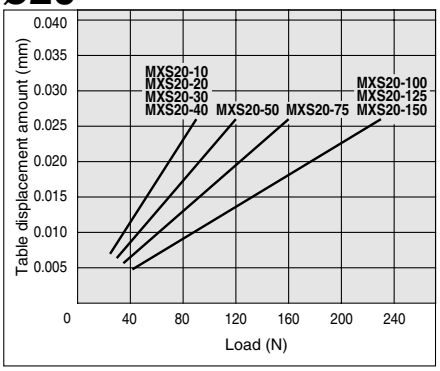
Displacement at “A” when a load is applied to “F” with the slide table retracted.



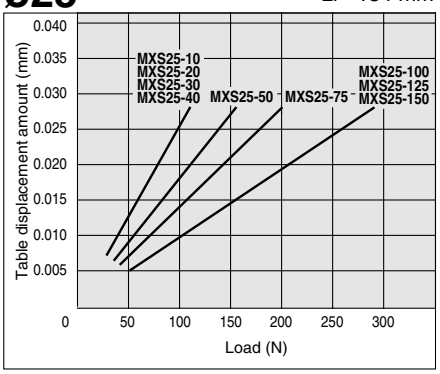
ø16 Lr=89 mm



ø20 Lr=122 mm

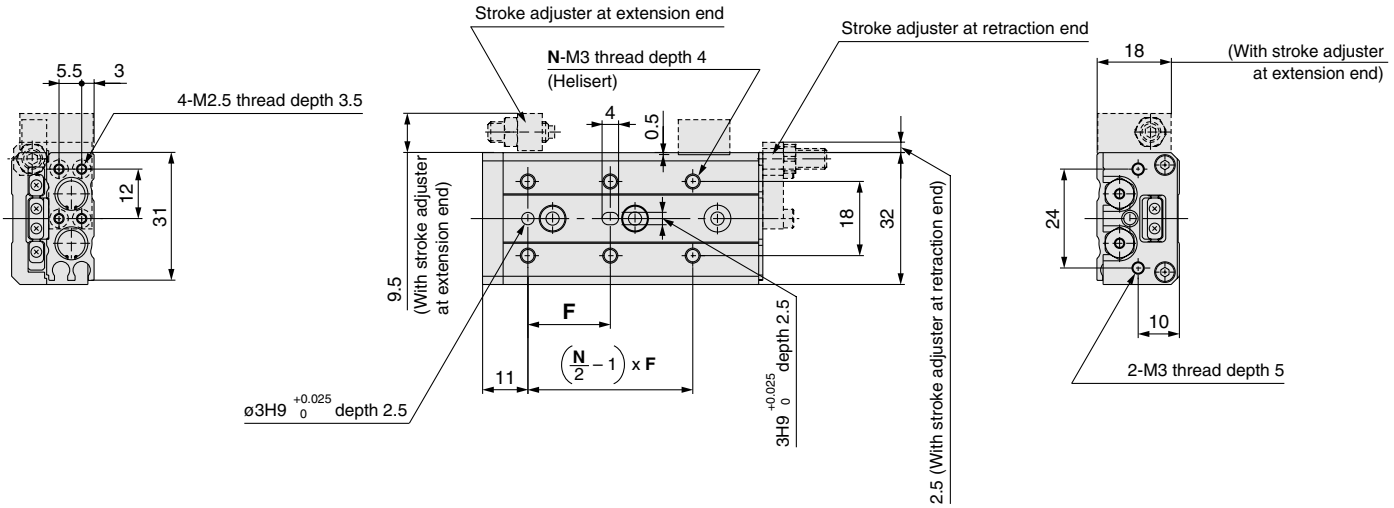


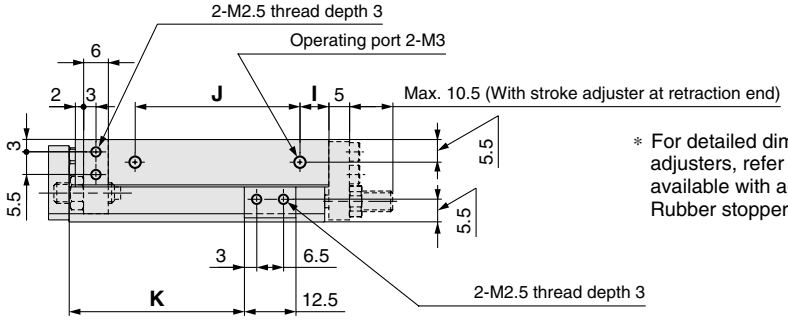
ø25 Lr=154 mm



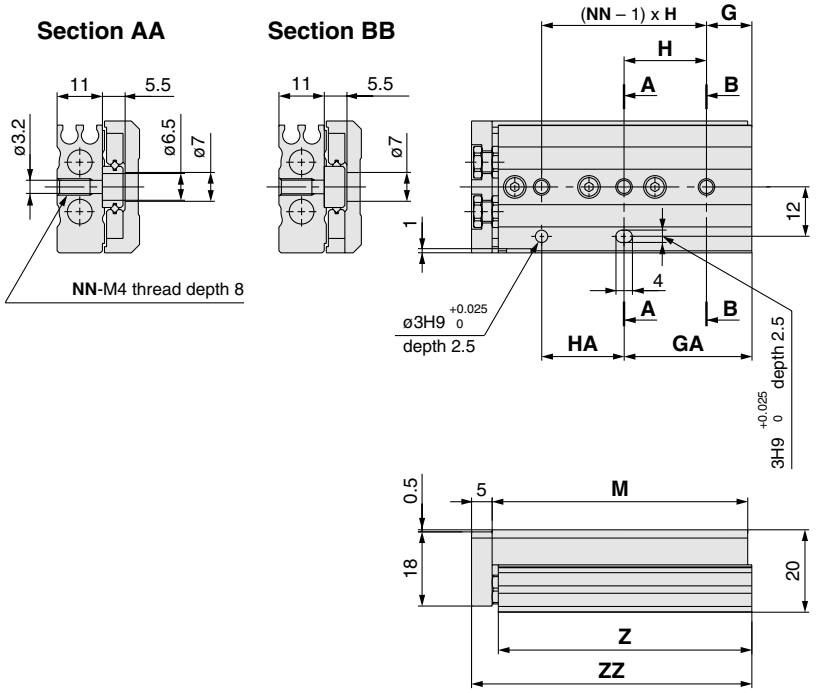
Dimensions: MXS6

Basic style





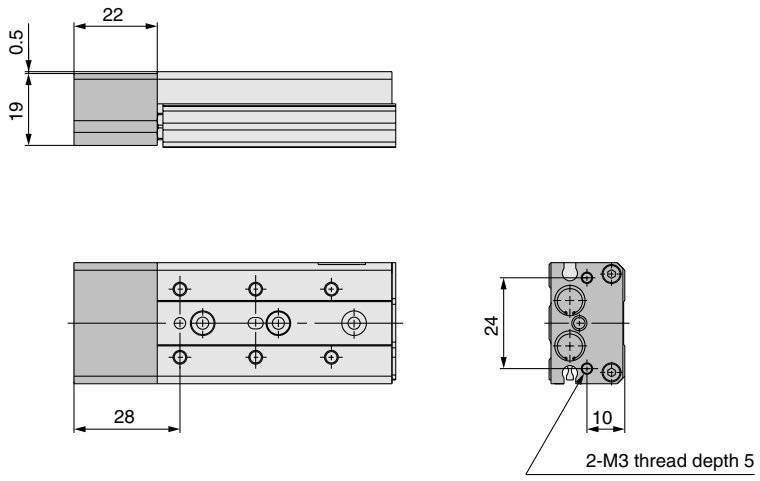
* For detailed dimensions on stroke adjusters, refer to the options available with adjusters. Rubber stopper (See page 19.)



(mm)

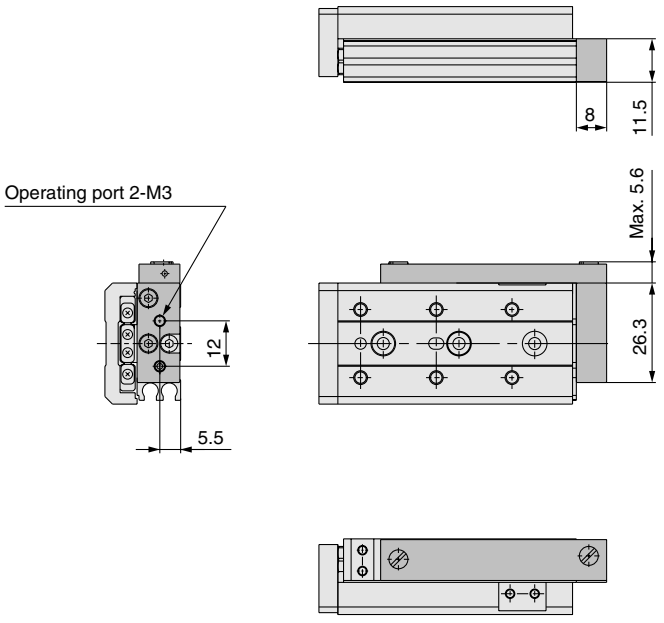
Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXS6-10	20	4	6	25	2	11	20	10	17	22.5	42	41.5	48
MXS6-20	30	4	6	35	2	21	20	10	27	32.5	52	51.5	58
MXS6-30	20	6	11	20	3	31	20	7	40	42.5	62	61.5	68
MXS6-40	28	6	13	30	3	43	30	19	50	52.5	84	83.5	90
MXS6-50	38	6	17	24	4	41	48	25	60	62.5	100	99.5	106

With buffer (ø6) MXS6-□□F



∗ Other dimensions are the same as the basic style.

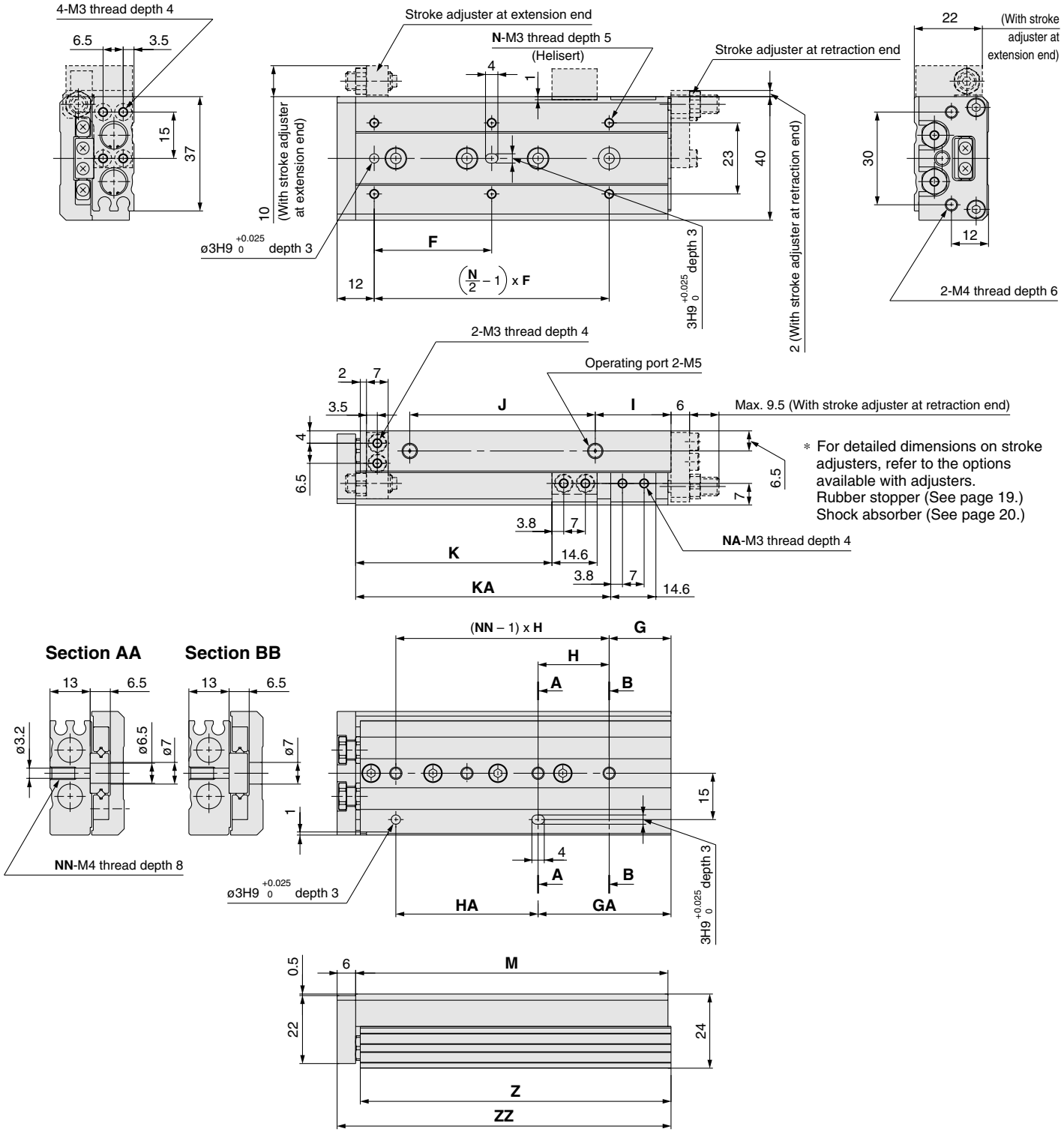
Axial piping type (ø6) MXS6-□□P



∗ Other dimensions are the same as the basic style.

Dimensions: MXS8

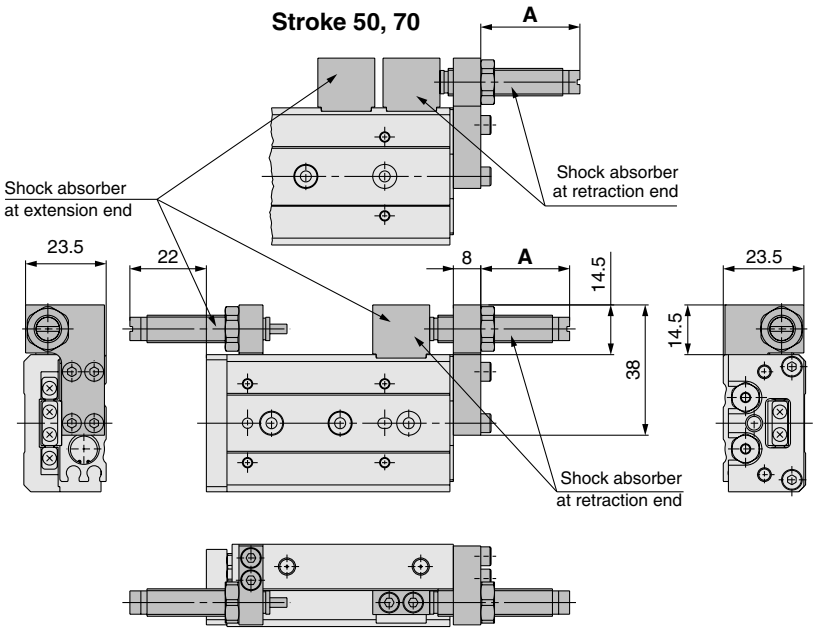
Basic style



(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS8-10	25	4	9	28	2	17	20	13	19.5	23.5	—	2	49	48.5	56
MXS8-20	25	4	12	30	2	12	30	8.5	29	33.5	—	2	54	53.5	61
MXS8-30	40	4	13	20	3	33	20	9.5	39	43.5	—	2	65	64.5	72
MXS8-40	50	4	15	28	3	43	28	10.5	56	53.5	—	2	83	82.5	90
MXS8-50	38	6	20	23	4	43	46	24.5	60	63.5	82.5	4	101	100.5	108
MXS8-75	50	6	27	28	5	83	56	38.5	96	88.5	132.5	4	151	150.5	158

With shock absorber (ø8) MXS8-□□BS/BT/B

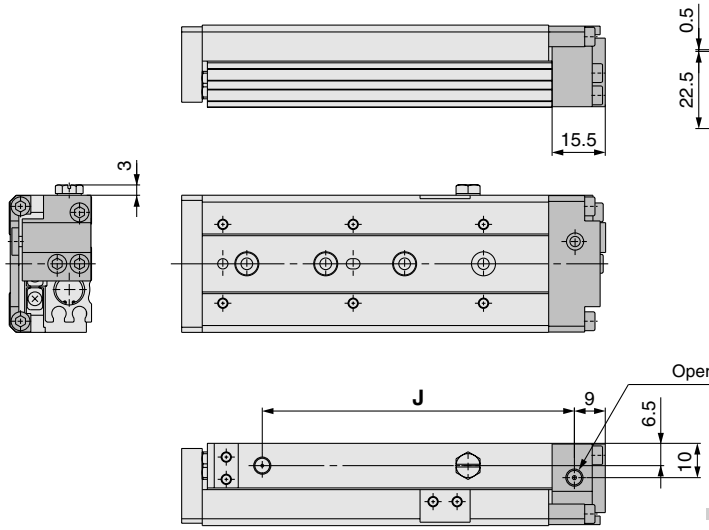


(mm)

Model	Stroke adjustment range		**A** dimension
	Extension end	Retraction end	(Retracted side mounting)
MXS8-10	Maximum 20	5	22
MXS8-20		15	27
MXS8-30		15	26
MXS8-40		5	18
MXS8-50		20	29
MXS8-75		20	29

∗ Other dimensions are the same as the basic style.

With end lock (ø8) MXS8-□□R

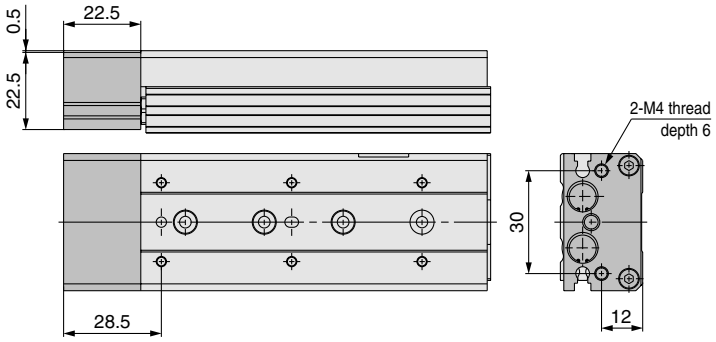


(mm)

Model	**J**
MXS8-10R	39
MXS8-20R	44
MXS8-30R	55
MXS8-40R	73
MXS8-50R	91
MXS8-75R	141

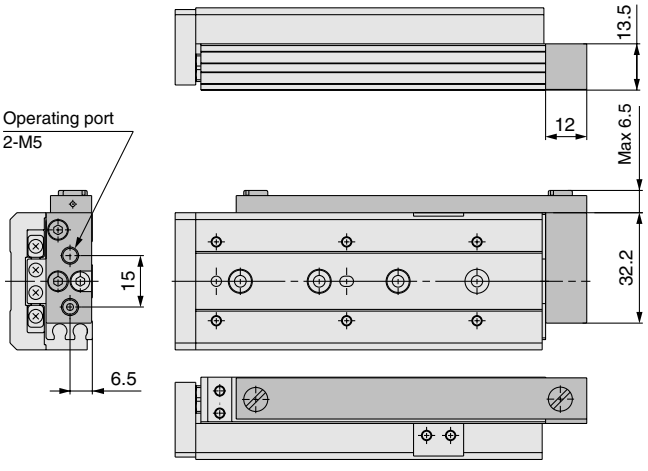
∗ Other dimensions are the same as the basic style.

With buffer (ø8) MXS8-□□F



∗ Other dimensions are the same as the basic style.

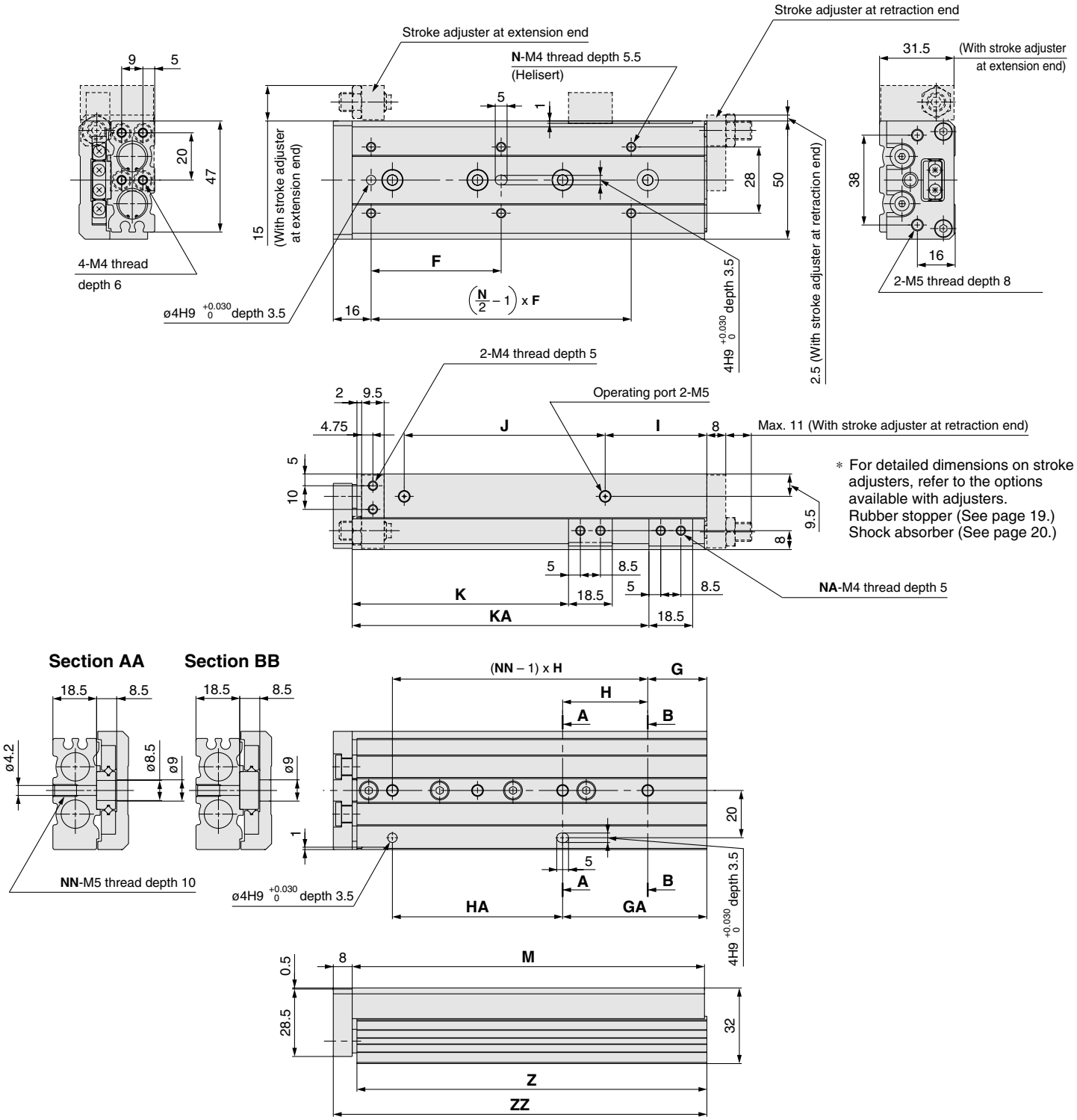
Axial piping type (ø8) MXS8-□□P



∗ Other dimensions are the same as the basic style.

Dimensions: MXS12

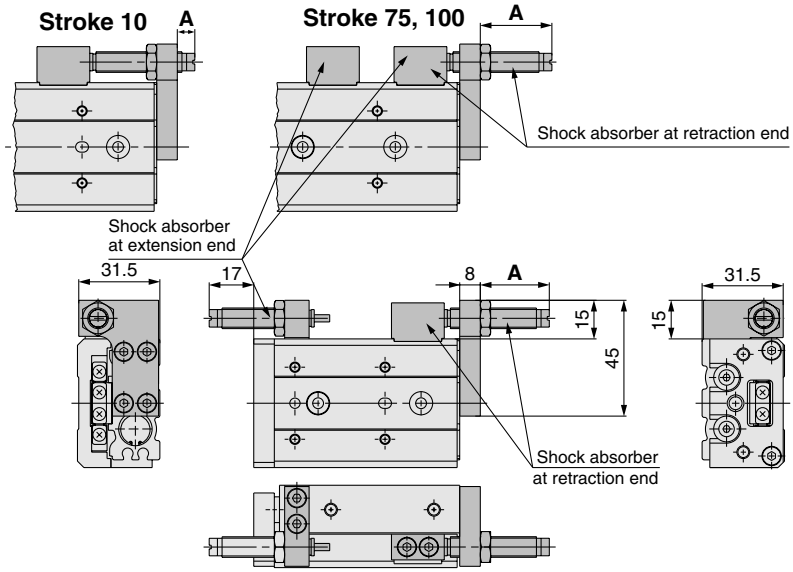
Basic style



(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS12-10	35	4	15	40	2	15	40	10	40	26.5	—	2	71	70	80
MXS12-20	35	4	15	40	2	15	40	10	40	36.5	—	2	71	70	80
MXS12-30	35	4	15	40	2	15	40	10	40	46.5	—	2	71	70	80
MXS12-40	50	4	17	25	3	42	25	10	52	56.5	—	2	83	82	92
MXS12-50	35	6	15	36	3	51	36	22	60	66.5	—	2	103	102	112
MXS12-75	55	6	25	36	4	61	72	43	85	91.5	125.5	4	149	148	158
MXS12-100	65	6	35	38	5	111	76	52	130	116.5	179.5	4	203	202	212

With shock absorber (ø12) MXS12-□□BS/BT/B

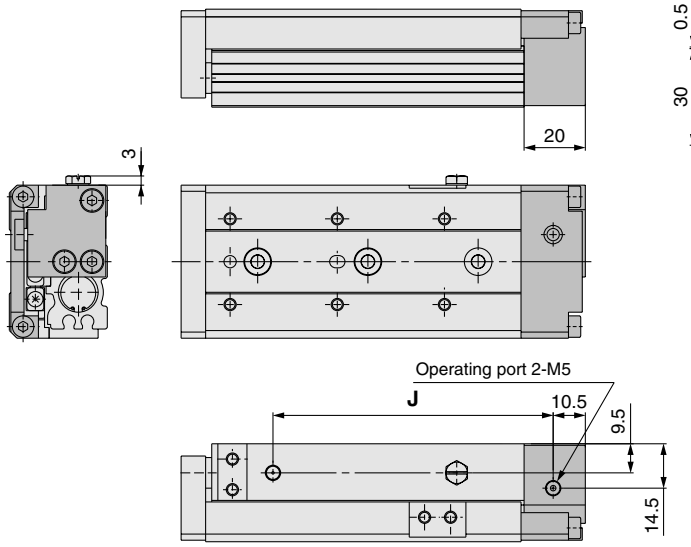


∗ Other dimensions are the same as the basic style.

(mm)

Model	Stroke adjustment range		**A** dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS12-10	Maximum 20	2	7
MXS12-20		5	17
MXS12-30		15	27
MXS12-40		15	25
MXS12-50		5	15
MXS12-75		15	28
MXS12-100		15	28

With end lock (ø12) MXS12-□□R

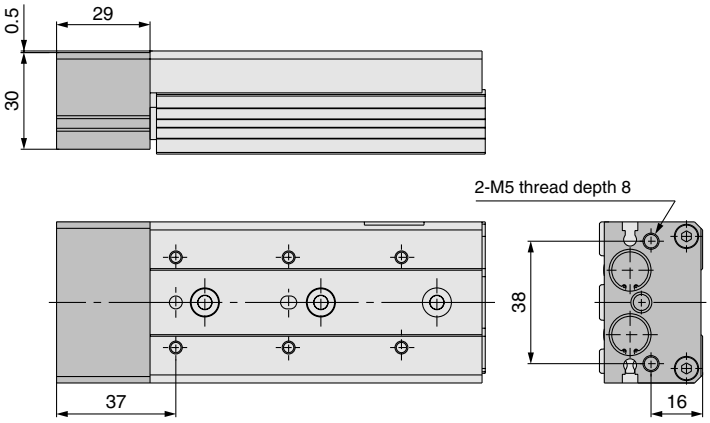


(mm)

Model	**J**
MXS12-10R	59.5
MXS12-20R	59.5
MXS12-30R	59.5
MXS12-40R	71.5
MXS12-50R	91.5
MXS12-75R	137.5
MXS12-100R	191.5

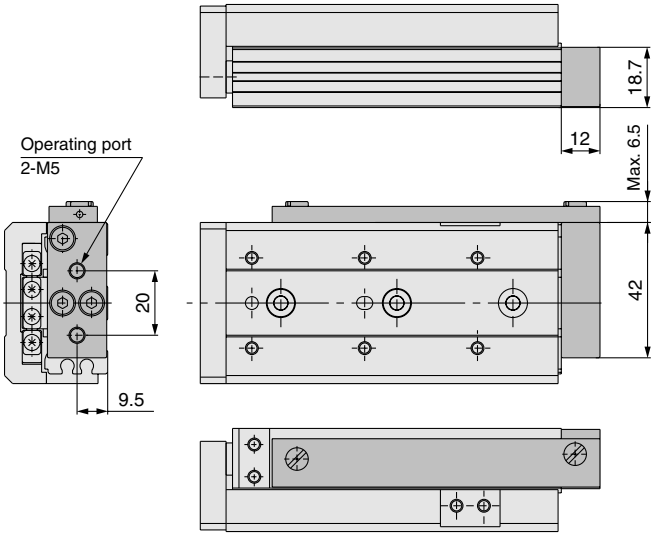
∗ Other dimensions are the same as the basic style.

With buffer (ø12) MXS12-□□F



∗ Other dimensions are the same as the basic style.

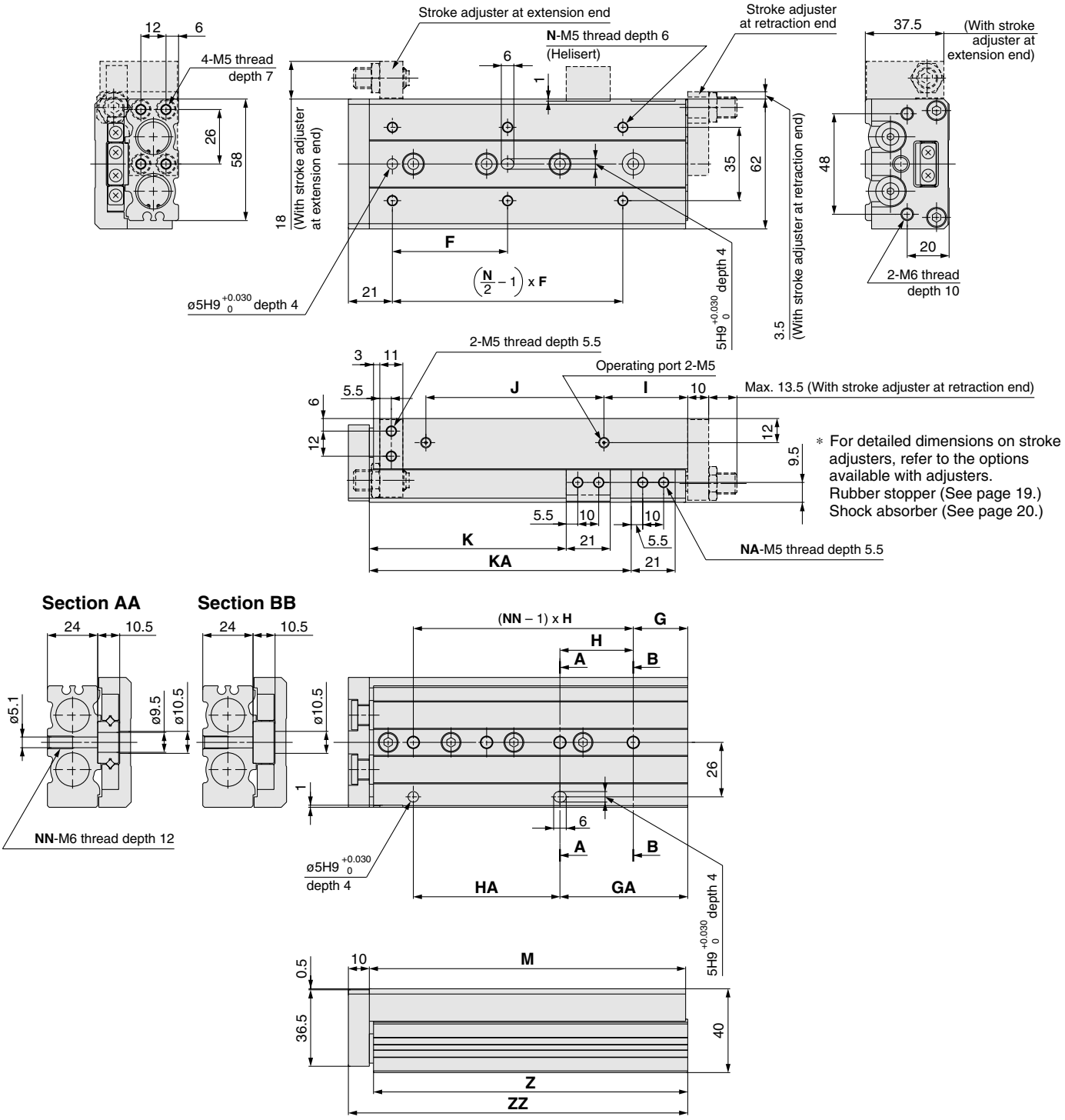
Axial piping type (ø12) MXS12-□□P



∗ Other dimensions are the same as the basic style.

Dimensions: MXS16

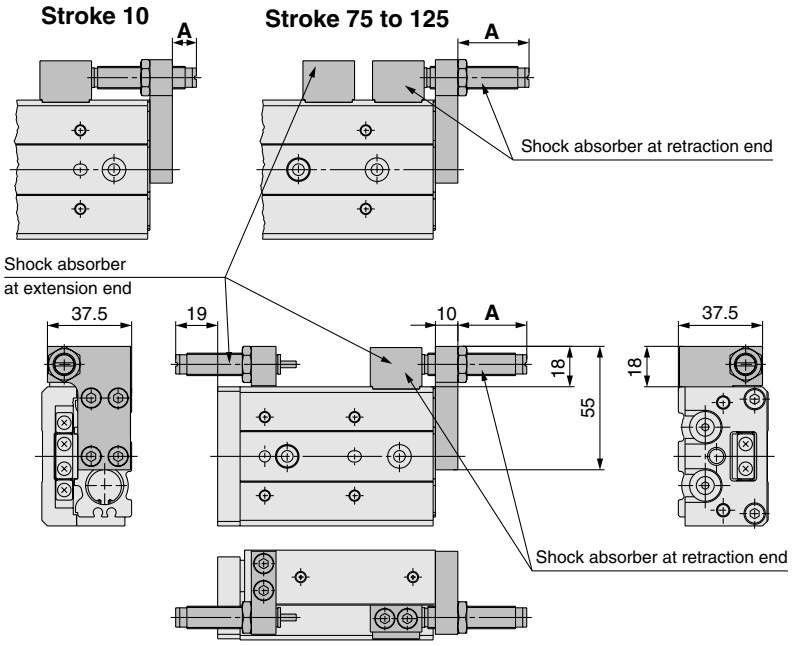
Basic style



(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS16-10	35	4	16	40	2	16	40	10	40	29	—	2	76	75	87
MXS16-20	35	4	16	40	2	16	40	10	40	39	—	2	76	75	87
MXS16-30	35	4	16	40	2	16	40	10	40	49	—	2	76	75	87
MXS16-40	40	4	16	50	2	16	50	10	50	59	—	2	86	85	97
MXS16-50	30	6	21	30	3	51	30	15	60	69	—	2	101	100	112
MXS16-75	55	6	26	35	4	61	70	40	85	94	125	4	151	150	162
MXS16-100	65	6	39	35	5	109	70	55	118	119	173	4	199	198	210
MXS16-125	70	8	19	35	7	159	70	68	155	144	223	4	249	248	260

With shock absorber (ø16) MXS16-□□BS/BT/B

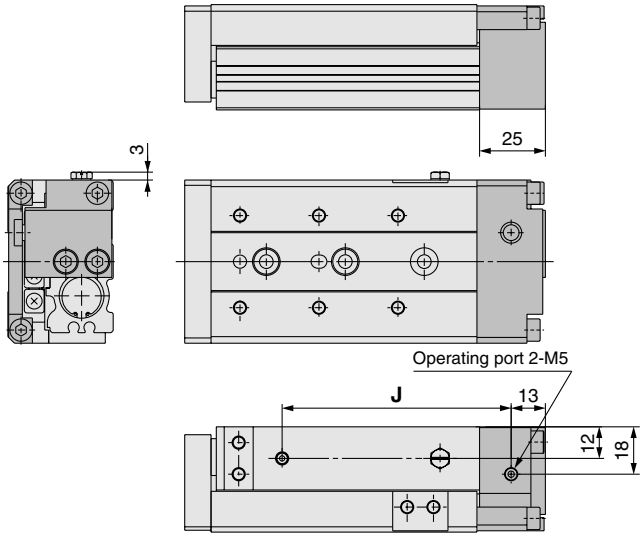


(mm)

Model	Stroke adjustment range		**A** dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS16-10	Maximum 25	5	11
MXS16-20		10	21
MXS16-30		20	31
MXS16-40		20	31
MXS16-50		15	26
MXS16-75		20	32
MXS16-100		20	32
MXS16-125		20	32

∗ Other dimensions are the same as the basic style.

With end lock (ø16) MXS16-□□R

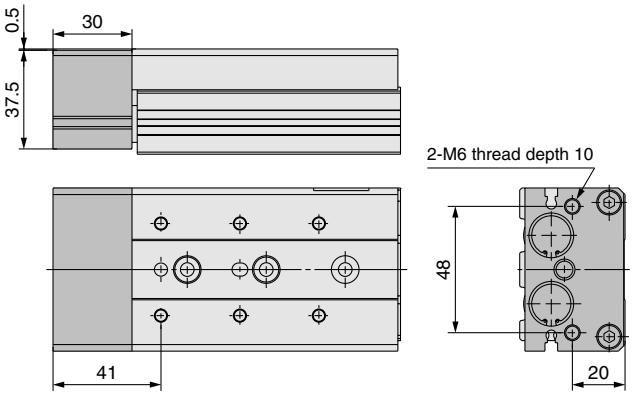


(mm)

Model	**J**
MXS16-10R	62
MXS16-20R	62
MXS16-30R	62
MXS16-40R	72
MXS16-50R	87
MXS16-75R	137
MXS16-100R	185
MXS16-125R	235

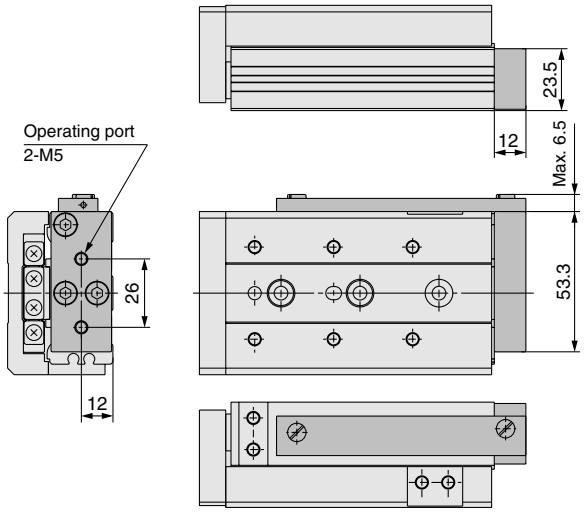
∗ Other dimensions are the same as the basic style.

With buffer (ø16) MXS16-□□F



∗ Other dimensions are the same as the basic style.

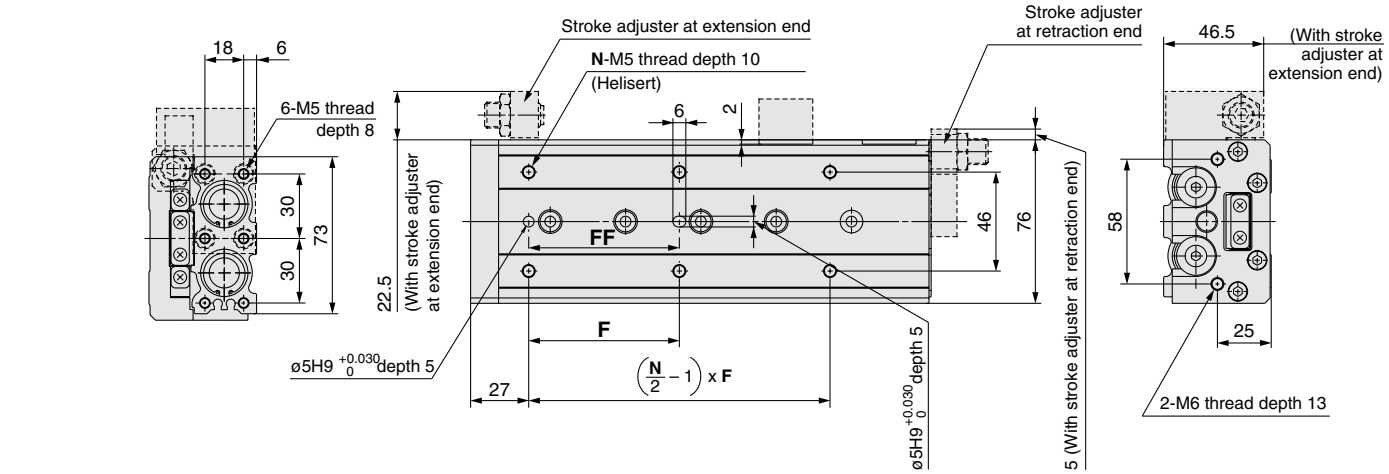
Axial piping type (ø16) MXS16-□□P

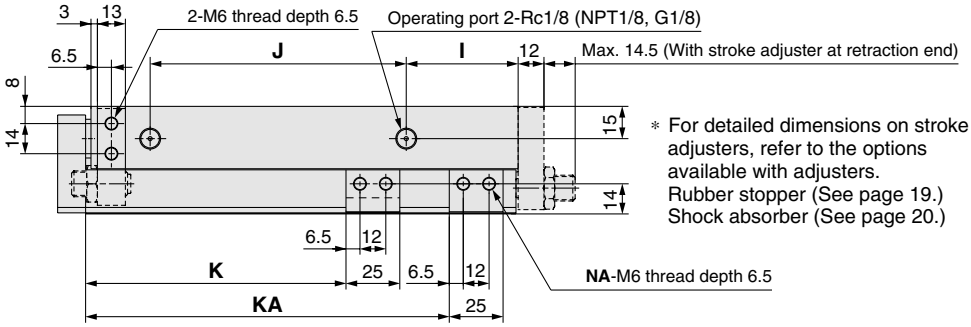


∗ Other dimensions are the same as the basic style.

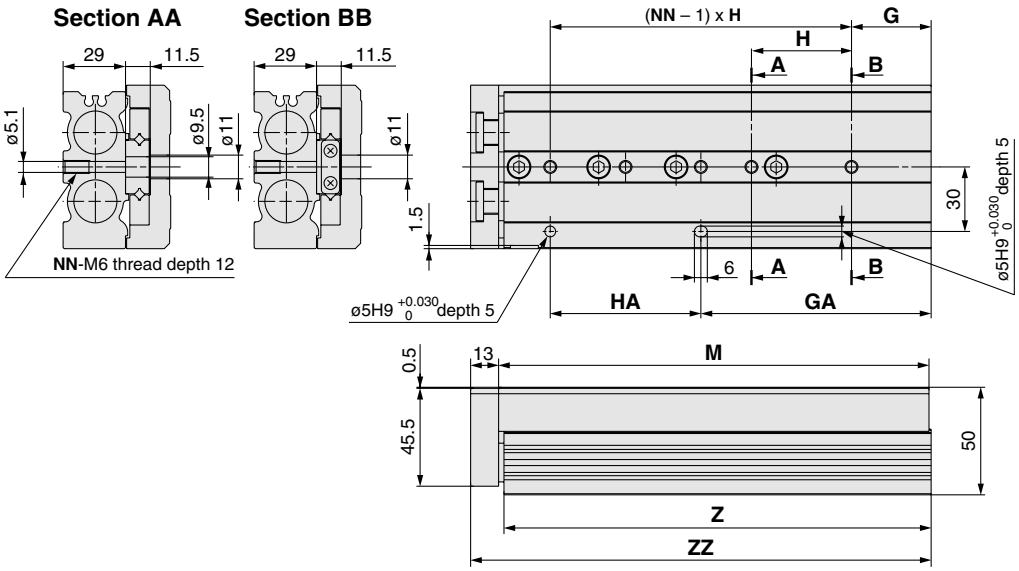
Dimensions: MXS20

Basic style





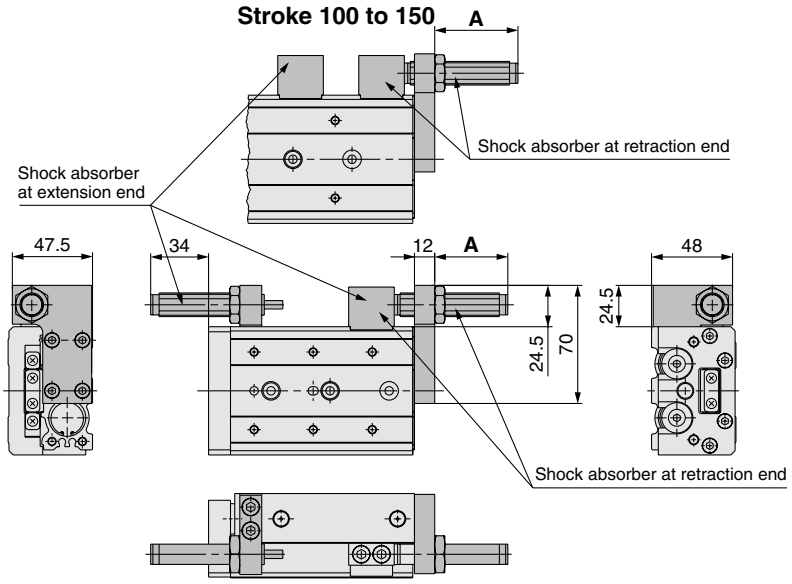
* For detailed dimensions on stroke adjusters, refer to the options available with adjusters.
Rubber stopper (See page 19.)
Shock absorber (See page 20.)



(mm)

Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS20-10	50	40	4	15	45	2	25	35	10	44	31	—	2	83	81.5	97
MXS20-20	50	40	4	15	45	2	25	35	10	44	41	—	2	83	81.5	97
MXS20-30	50	40	4	15	45	2	25	35	10	44	51	—	2	83	81.5	97
MXS20-40	60	50	4	15	55	2	35	35	10	54	61	—	2	93	91.5	107
MXS20-50	35	35	6	15	35	3	50	35	10	69	71	—	2	108	106.5	122
MXS20-75	60	60	6	19	35	4	54	70	10	108	96	—	2	147	145.5	161
MXS20-100	70	70	6	37	35	5	107	70	58	113	121	169	4	200	198.5	214
MXS20-125	70	70	8	41	38	6	155	76	70	155	146	223	4	254	252.5	268
MXS20-150	80	80	8	19	44	7	195	88	87	190	171	275	4	306	304.5	320

With shock absorber (ø20) MXS20-□□BS/BT/B

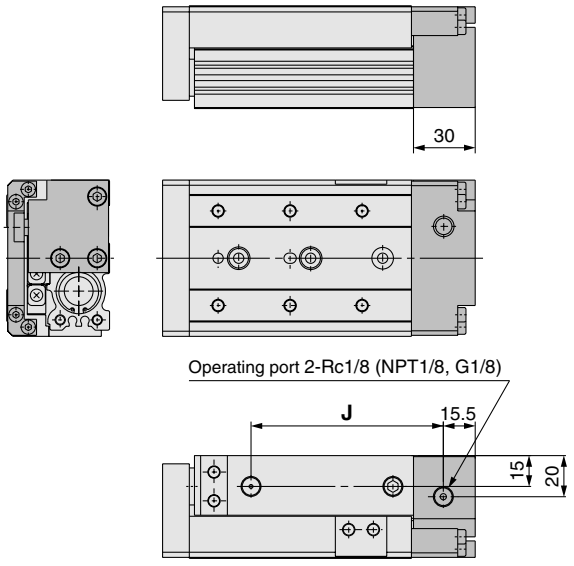


(mm)

Model	Stroke adjustment range		**A** dimension
	Extension end	Retraction end	(Retracted side mounting)
MXS20-10	Maximum 40	5	28
MXS20-20		15	38
MXS20-30		25	48
MXS20-40		35	48
MXS20-50		30	43
MXS20-75		15	29
MXS20-100		35	49
MXS20-125		35	49
MXS20-150		35	49

∗ Other dimensions are the same as the basic style.

With end lock (ø20) MXS20-□□R

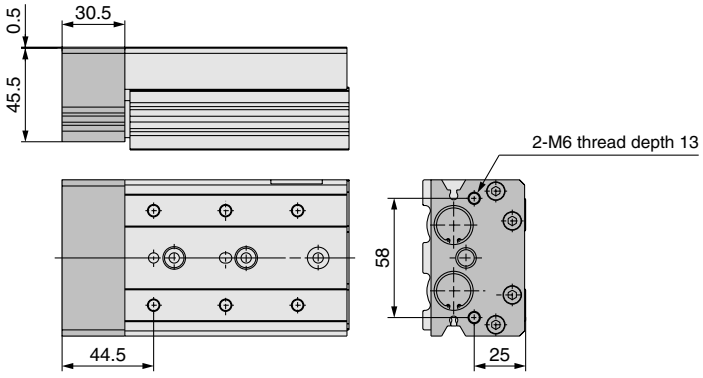


(mm)

Model	**J**
MXS20-10R	68.5
MXS20-20R	68.5
MXS20-30R	68.5
MXS20-40R	78.5
MXS20-50R	93.5
MXS20-75R	132.5
MXS20-100R	185.5
MXS20-125R	239.5
MXS20-150R	291.5

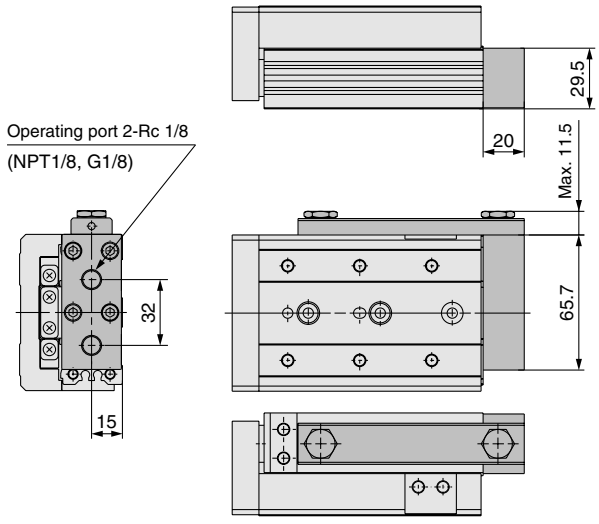
∗ Other dimensions are the same as the basic style.

With buffer (ø20) MXS20-□□F



∗ Other dimensions are the same as the basic style.

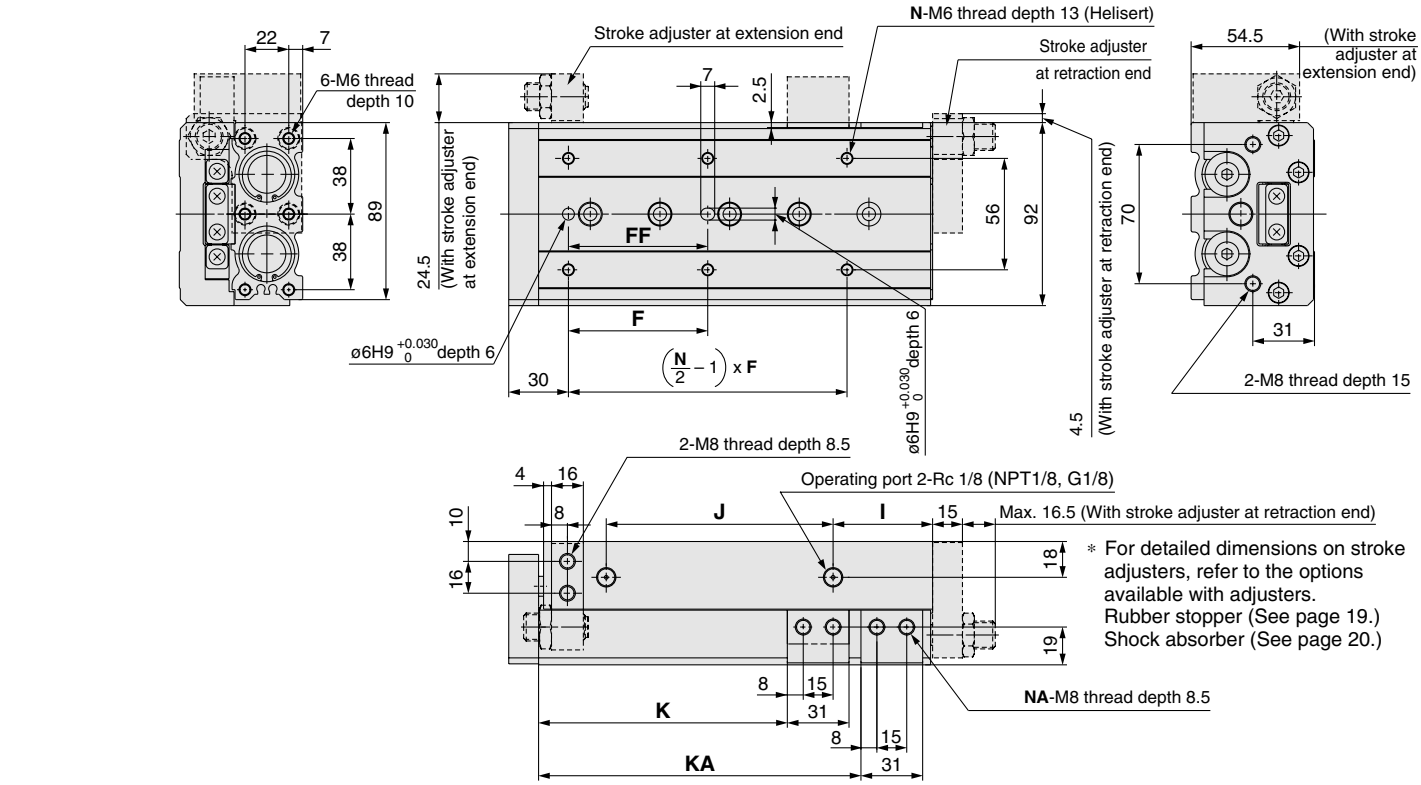
Axial piping type (ø20) MXS20-□□P



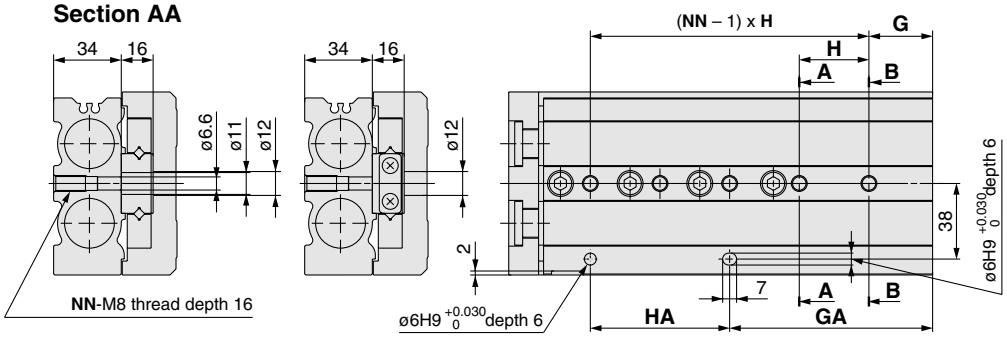
∗ Other dimensions are the same as the basic style.

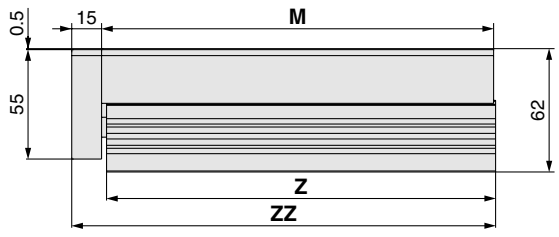
Dimensions: MXS25

Basic style



Section AA



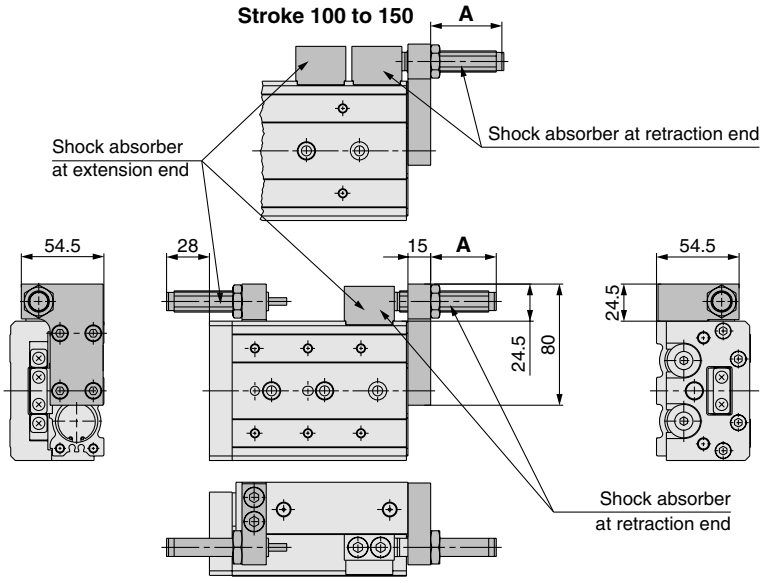


Section BB

(mm)

Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS25-10	50	40	4	22	45	2	22	45	12	47	35	—	2	92	90.5	108
MXS25-20	50	40	4	22	45	2	22	45	12	47	45	—	2	92	90.5	108
MXS25-30	50	40	4	22	45	2	22	45	12	47	55	—	2	92	90.5	108
MXS25-40	60	50	4	22	55	2	22	55	12	57	65	—	2	102	100.5	118
MXS25-50	35	35	6	20	35	3	55	35	12	70	75	—	2	115	113.5	131
MXS25-75	60	60	6	26	35	4	61	70	33	90	100	—	2	156	154.5	172
MXS25-100	70	70	6	32	35	5	102	70	50	114	125	162	4	197	195.5	213
MXS25-125	75	75	8	40	38	6	154	76	67	155	150	218	4	255	253.5	271
MXS25-150	80	80	8	30	40	7	190	80	82	180	175	258	4	295	293.5	311

With shock absorber (ø25) MXS25-□□BS/BT/B

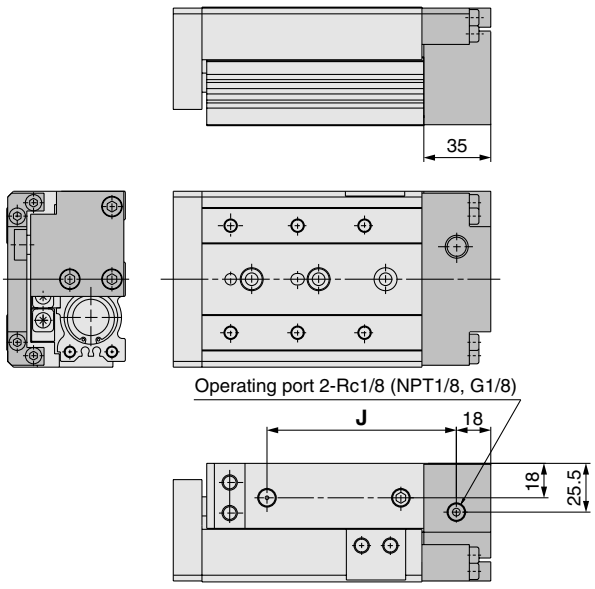


(mm)

Model	Stroke adjustment range		**A** dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS25-10	Maximum 35	5	26
MXS25-20		15	36
MXS25-30		25	46
MXS25-40		35	46
MXS25-50		30	43
MXS25-75		15	27
MXS25-100		35	48
MXS25-125		35	46
MXS25-150		35	46

∗ Other dimensions are the same as the basic style.

With end lock (ø25) MXS25-□□R

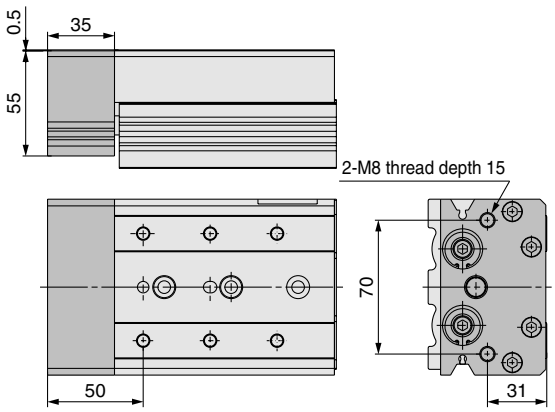


(mm)

Model	**J**
MXS25-10R	76
MXS25-20R	76
MXS25-30R	76
MXS25-40R	86
MXS25-50R	99
MXS25-75R	140
MXS25-100R	181
MXS25-125R	239
MXS25-150R	279

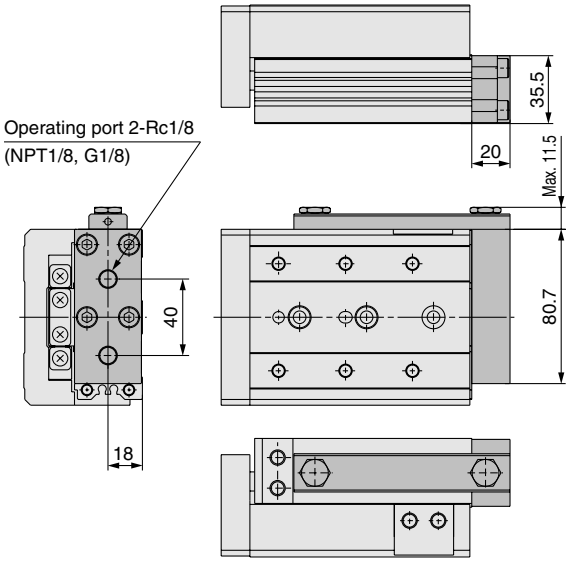
∗ Other dimensions are the same as the basic style.

With buffer (ø25) MXS25-□□F



∗ Other dimensions are the same as the basic style.

Axial piping type (ø25) MXS25-□□P



∗ Other dimensions are the same as the basic style.

Series MXS
Optional Specifications 1

Dimensions of Stroke Adjuster at Extension End

Body mounting section

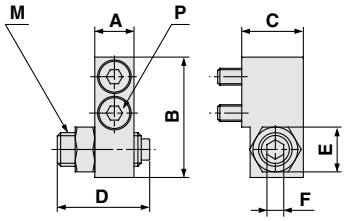
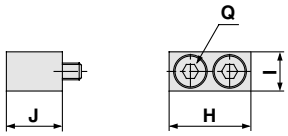


Table mounting section

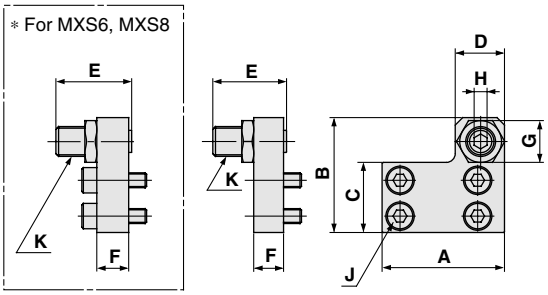


Applicable size	Model	Stroke adjustment range (mm)	Body mounting section								Table mounting section			
			A	B	C	D	E	F	M	P *	H	I	J	Q *
MXS6 (L)	MXS-AS6 (L)	5	6	17.8	10.5	16.5	7	2.5	M5	M2.5 x 10	12.5	6	8.5	M2.5 x 8
	MXS-AS6 (L)-X11	15				26.5								
MXS8 (L)	MXS-AS8 (L)	5	7	21.5	11	16.5	8	3	M6	M3 x 12	14.6	7	10	M3 x 10
	MXS-AS8 (L)-X11	15				26.5								
	MXS-AS8 (L)-X12	25				36.5								
MXS12 (L)	MXS-AS12 (L)	5	9.5	31	16	20	12	4	M8 x 1	M4 x 15	18.5	10	13	M4 x 12
	MXS-AS12 (L)-X11	15				30								
	MXS-AS12 (L)-X12	25				40								
MXS16 (L)	MXS-AS16 (L)	5	11	37	19	24.5	14	5	M10 x 1	M5 x 18	21	12	16.5	M5 x 18
	MXS-AS16 (L)-X11	15				34.5								
	MXS-AS16 (L)-X12	25				44.5								
MXS20 (L)	MXS-AS20 (L)	5	13	45.5	24	27.5	17	6	M12 x 1.25	M6 x 20	25	13	21	M6 x 20
	MXS-AS20 (L)-X11	15				37.5								
	MXS-AS20 (L)-X12	25				47.5								
MXS25 (L)	MXS-AS25 (L)	5	16	53.5	26.5	32.5	19	6	M14 x 1.5	M8 x 25	31	17	25.5	M8 x 25
	MXS-AS25 (L)-X11	15				42.5								
	MXS-AS25 (L)-X12	25				52.5								

* Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to "How to Order Stroke Adjuster" below. Dimensions are identical with the standard

Dimensions of Stroke Adjuster at Retraction End



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	E	F	G	H	J *	K
MXS6 (L)	MXS-AT6 (L)	5	21	19	10.5	8	16.5	5	7	2.5	M2.5 x 8	M5 x 0.8
	MXS-AT6 (L)-X11	15					26.5					
MXS8 (L)	MXS-AT8 (L)	5	25	22.5	12.5	9	16.5	6	8	3	M3 x 10	M6 x 1
	MXS-AT8 (L)-X11	15					26.5					
	MXS-AT8 (L)-X12	25					36.5					
MXS12 (L)	MXS-AT12 (L)	5	32	31	18.5	13	20	8	12	4	M4 x 8	M8 x 1
	MXS-AT12 (L)-X11	15					30					
	MXS-AT12 (L)-X12	25					40					
MXS16 (L)	MXS-AT16 (L)	5	40	38.5	23	15	24.5	10	14	5	M5 x 10	M10 x 1
	MXS-AT16 (L)-X11	15					34.5					
	MXS-AT16 (L)-X12	25					44.5					
MXS20 (L)	MXS-AT20 (L)	5	50	48	29	21	27.5	12	17	6	M5 x 12	M12 x 1.25
	MXS-AT20 (L)-X11	15					37.5					
	MXS-AT20 (L)-X12	25					47.5					
MXS25 (L)	MXS-AT25 (L)	5	60	58	35	23	32.5	15	19	6	M6 x 16	M14 x 1.5
	MXS-AT25 (L)-X11	15					42.5					
	MXS-AT25 (L)-X12	25					52.5					

* Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to "How to Order Stroke Adjuster" below. Dimensions are identical with the standard

How to Order Stroke Adjuster (Accessory)

MXS — AS | 12 | L — X11

Stroke adjuster

AS	Stroke adjuster	Extension end
AT		Retraction end
BS	Shock absorber	Extension end
BT		Retraction end

Applicable bore size (mm)

6	ø6
8	ø8
12	ø12
16	ø16
20	ø20
25	ø25

Symmetric type

-	Standard type
L	Symmetric type

Adjustable range (Stroke adjuster only)

-	5 mm	Standard
-X11	15 mm	Option
-X12	25 mm	

* -X12 (adjustable range: 25 mm) is not available with the MXS6 series.
* -X11 and -X12 are not available with shock absorber type.
* W/ shock absorber is not available with the MXS6 series.
* For dimensions, refer to the figure above. As for symmetric type, view the external dimensions symmetrically. (Adjusting bolt in symmetric type is equipped in reverse direction.)

Dimensions of Adjuster Option/With Shock Absorber (BS/BT)

Extension End

Body mounting section

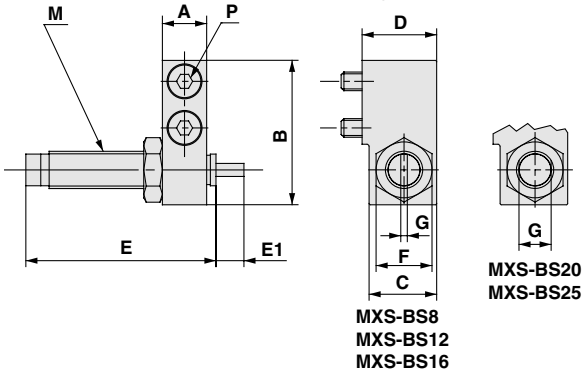
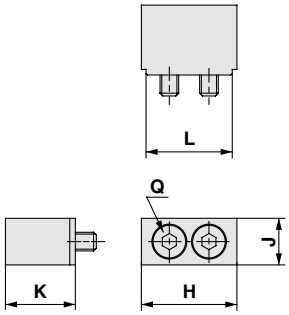


Table mounting section



Applicable size	Model	Body mounting section										Table mounting section				
		A	B	C	D	E	E1	F	G	M	P *	H	J	K	L	Q *
MXS8 (L)	MXS-BS8 (L)	7	23	14	15.5	40.8	5	12	1.4	M8 x 1	M3 x 16	16.6	7	15.5	14.6	M3 x 16
MXS12 (L)	MXS-BS12 (L)	9.5	31	14.5	16	40.8	6	12	1.4	M8 x 1	M4 x 15	20.5	10	15	18.5	M4 x 15
MXS16 (L)	MXS-BS16 (L)	11	37	17.5	19	46.7	7	14	1.4	M10 x 1	M5 x 18	23	12	18.5	21	M5 x 18
MXS20 (L)	MXS-BS20 (L)	13	47	23.5	26	67.3	11	19	12	M14 x 1.5	M6 x 25	27	13	25.5	25	M6 x 25
MXS25 (L)	MXS-BS25 (L)	16	53.5	23.5	26.5	67.3	12	19	12	M14 x 1.5	M8 x 25	33	17	25.5	31	M8 x 25

∗ Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to “How to Order Stroke Adjuster” on page 19. Dimensions are identical with the standard type.

Retraction End

Body mounting section

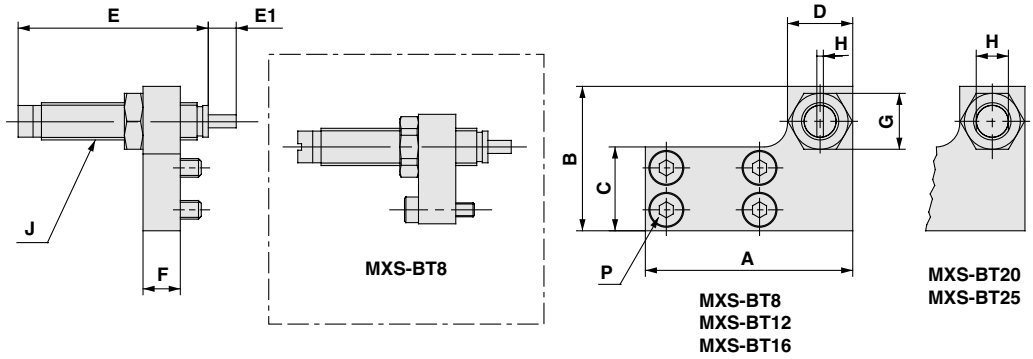
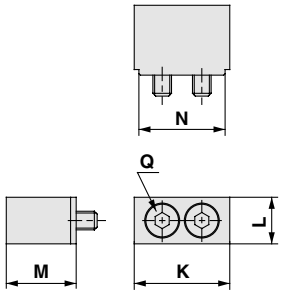


Table mounting section



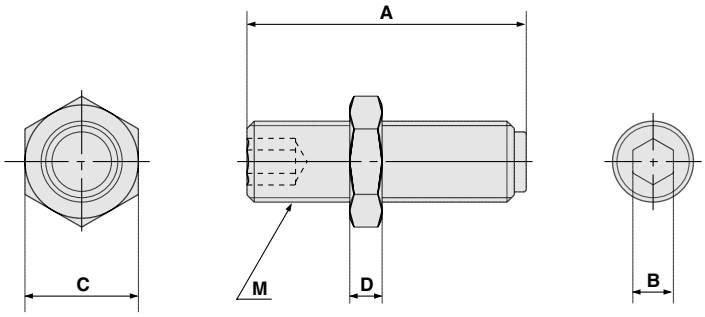
Applicable size	Model	Body mounting section											Table mounting section				
		A	B	C	D	E	E1	F	G	H	J	P *	K	L	M	N	Q *
MXS8 (L)	MXS-BT8 (L)	38	23	12.5	14	40.8	5	8	12	1.4	M8 x 1	M3 x 12	16.6	7	15.5	14.6	M3 x 16
MXS12 (L)	MXS-BT12 (L)	45	31	18	14	40.8	6	8	12	1.4	M8 x 1	M4 x 8	20.5	10	15	18.5	M4 x 15
MXS16 (L)	MXS-BT16 (L)	55	37	23.5	16	46.7	7	10	14	1.4	M10 x 1	M5 x 10	23	12	18.5	21	M5 x 18
MXS20 (L)	MXS-BT20 (L)	70	47	29	23	67.3	11	12	19	12	M14 x 1.5	M5 x 12	27	13	25.5	25	M6 x 25
MXS25 (L)	MXS-BT25 (L)	80	54	35	23	67.3	12	15	19	12	M14 x 1.5	M6 x 16	33	17	25.5	31	M8 x 25

∗ Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to “How to Order Stroke Adjuster” on page 19. Dimensions are identical with the standard type.

Series MXS
Optional Specifications 2

Dimensions of Adjusting Bolt



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	M
MXS6 (L)	MXS-A627	5	16.5	2.5	7	3	M5
	MXS-A627-X11	15	26.5				
MXS8 (L)	MXS-A827	5	16.5	3	8	3.5	M6
	MXS-A827-X11	15	26.5				
	MXS-A827-X12	25	36.5				
MXS12 (L)	MXS-A1227	5	20	4	12	4	M8 x 1
	MXS-A1227-X11	15	30				
	MXS-A1227-X12	25	40				
MXS16 (L)	MXS-A1627	5	24.5	5	14	4	M10 x 1
	MXS-A1627-X11	15	34.5				
	MXS-A1627-X12	25	44.5				
MXS20 (L)	MXS-A2027	5	27.5	6	17	5	M12 x 1.25
	MXS-A2027-X11	15	37.5				
	MXS-A2027-X12	25	47.5				
MXS25 (L)	MXS-A2527	5	32.5	6	19	6	M14 x 1.5
	MXS-A2527-X11	15	42.5				
	MXS-A2527-X12	25	52.5				

How to Order Adjusting Bolt

MXS — A [12] 27 — [X11]

Applicable bore size (mm)

MXS6	ø6
MXS8	ø8
MXS12	ø12
MXS16	ø16
MXS20	ø20
MXS25	ø25

Adjustment range

-	5 mm
X11	15 mm
X12	25 mm

∗ -X12 (adjustable range: 25 mm) is not available with the MXS6 series.
∗ For dimensions, refer to the figure above.
∗ Symmetric type is also the same.

Shock Absorber Specifications

Shock absorber model		RB0805	RB0806	RB1007	RB1411	RB1412
Applicable slide table		MXS8	MXS12	MXS16	MXS20	MXS25
Maximum energy absorption (J)		0.98	2.94	5.88	14.7	19.6
Stroke absorption (mm)		5	6	7	11	12
Maximum collision speed (mm/s)		–10 to 60				
Maximum operating frequency (cycle/min)		80	80	70	45	45
Maximum allowable thrust (N)		245	245	422	814	814
Ambient temperature range (°C)		–10 to 60				
Spring force (N)	When extended	1.96	1.96	4.22	6.86	6.86
	When retracted	3.83	4.22	6.86	15.30	15.98
Weight (g)		15	15	25	65	65

With End Lock Specifications

Model	MXS8	MXS12	MXS16	MXS20	MXS25
Bore size (mm)	8	12	16	20	25
Piston speed	50 to 500 mm/s				
Holding force (N)	25	60	110	160	250

Note) For caution on end lock, refer to back page 4.

With Buffer Mechanism Specifications

Model		MXS6	MXS8	MXS12	MXS16	MXS20	MXS25
Bore size (mm)		6	8	12	16	20	25
Piston speed		50 to 500 mm/s (Horizontal mounting 50 to 300 mm/s)					
Buffer stroke (mm)		5		10			
Buffer stroke load (N)	Stroke at 0 mm	3	5	10	13	17	21
	Maximum stroke	6	8	13	17	25	29

Note) For cautions on handling the buffer, refer to back page 4.
Note) If stroke is adjusted with the stroke adjuster at extension end, the buffer stroke is shortened by the adjusted length.

Applicable Auto Switch for Buffer

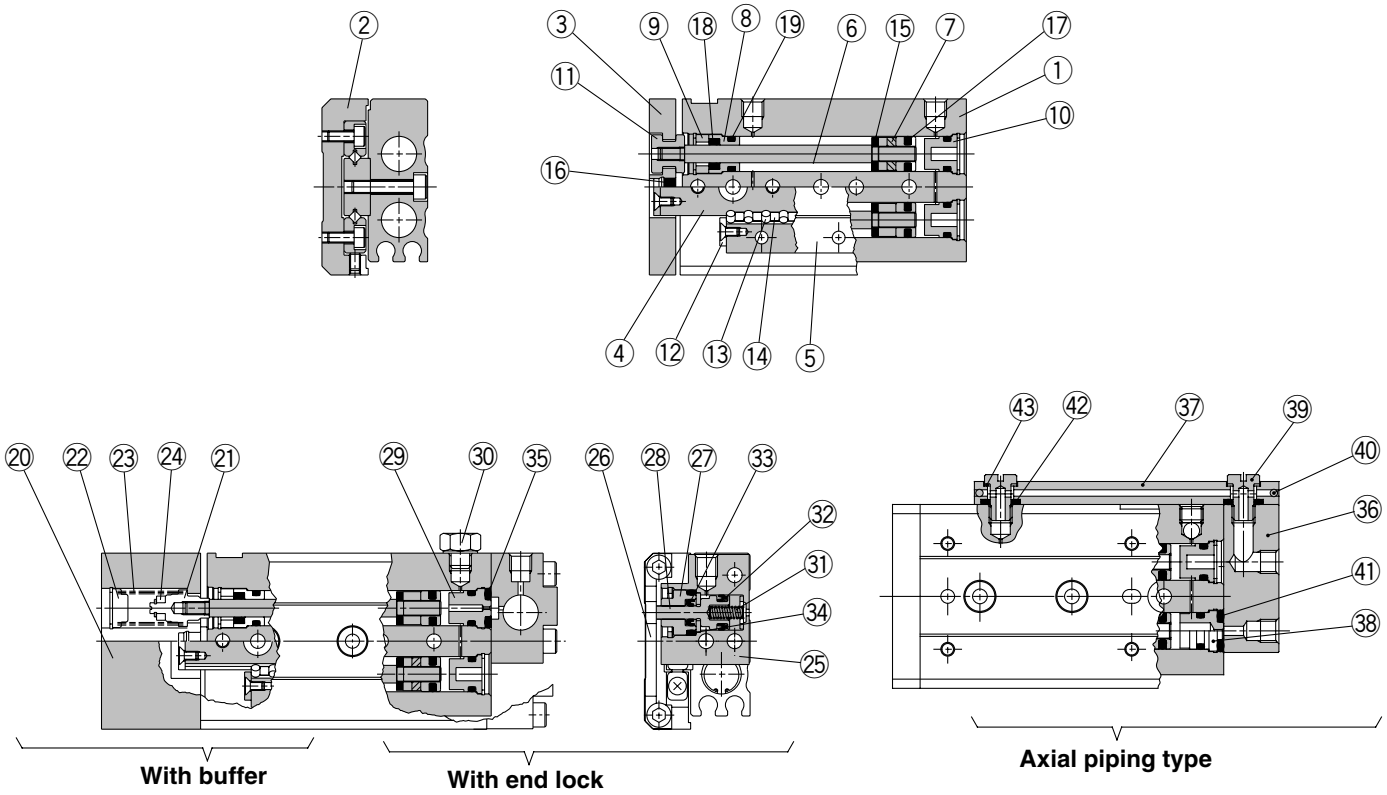
Type	Model	Specifications	Electrical entry direction
Solid state switch	**D-M9BV**	With indicator light, 2-wire	Vertical
	D-M9NV	With indicator light, 3-wire, Output: NPN	
	D-M9PV	With indicator light, 3-wire, Output: PNP	

∗ The auto switch for the buffer must be ordered separately.

With buffer mechanism

With end lock

Construction



Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Table	Aluminum alloy	Hard anodized
③	End plate	Aluminum alloy	Hard anodized
④	Rail	Carbon tool steel	Heat treated
⑤	Guide	Carbon tool steel	Heat treated
⑥	Rod	Stainless steel	
⑦	Piston assembly		With magnet on one side
⑧	Rod cover	Aluminum alloy	Anodized
⑨	Seal support	Brass	Electroless nickel plated
⑩	Head cap	Resin	
⑪	Floating bushing	Stainless steel	
⑫	Roller stopper	Stainless steel	
⑬	Cylindrical roller	High carbon chrome bearing steel	
⑭	Roller spacer	Resin	
⑮	Rod bumper	Polyurethane	
⑯	End bumper	Polyurethane	
⑰	Piston seal	NBR	
⑱	Rod seal	NBR	
⑲	O-ring	NBR	

Component Parts: With Buffer

No.	Description	Material	Note
⑳	End plate	Aluminum alloy	Hard anodized
㉑	Spring collar	Stainless steel	
㉒	Head cap	Stainless steel	
㉓	Spring	Stainless steel	
㉔	Magnet	Rare earth	

Component Parts: With End Lock

No.	Description	Material	Note
㉕	Locking body	Aluminum alloy	Hard anodized
㉖	Table support	Carbon steel	Anti-corrosive treated
㉗	Rod cover	Aluminum alloy	
㉘	Piston rod	Stainless steel	
㉙	Bushing	Aluminum alloy	Chromated
㉚	Blanking plug	Brass	Electroless nickel plated
㉛	Return spring	Stainless steel	
㉜	Piston seal	NBR	
㉝	Rod seal	NBR	
㉞	O-ring	NBR	
㉟	O-ring	NBR	

Component Parts: Axial Piping Type

No.	Description	Material	Note
㊱	Axial piping plate	Aluminum alloy	Hard anodized
㊲	Pipe	Aluminum alloy	Hard anodized
㊳	Bushing	Aluminum alloy	Chromated
㊴	Stud	Brass	Electroless nickel plated
㊵	Steel balls	Stainless steel	
㊶	O-ring	NBR	
㊷	O-ring	NBR	
㊸	Gasket		

* Seal kit includes 1 set of numbered seals in the table below. Order the appropriate seal kit depending on the cylinder bore size.

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
6	MXS6-PS	Set of nos. above ⑰ to ⑲.
8	MXS8-PS	
12	MXS12-PS	
16	MXS16-PS	
20	MXS20-PS	
25	MXS25-PS	

Replacement Parts: Seal Kit for With End Lock

Bore size (mm)	Kit no.	Contents
8	MXS8R-PS	Set of nos. above ⑰ to ⑲ ㉜ to ㉟.
12	MXS12R-PS	
16	MXS16R-PS	
20	MXS20R-PS	
25	MXS25R-PS	

Replacement Parts: Seal Kit for Axial Piping Type

Bore size (mm)	Kit no.	Contents
6	MXS6P-PS	Set of nos. above ⑰ to ⑲ ㊶ to ㊸
8	MXS8P-PS	
12	MXS12P-PS	
16	MXS16P-PS	
20	MXS20P-PS	
25	MXS25P-PS	

Air Slide Table (Symmetric Type)
Series MXS□L

How to Order

Air slide table **MXS** **12** **□** **L** — **50** **AS** — **M9N** **S**

Port thread type

-	M	ø6 to ø16
	Rc	ø20, ø25
TN	NPT	
TF	G	

Symmetric type

Bore size (Stroke (mm))

6	10, 20, 30, 40, 50
8	10, 20, 30, 40, 50, 75
12	10, 20, 30, 40, 50, 75, 100
16	10, 20, 30, 40, 50, 75, 100, 125
20	10, 20, 30, 40, 50, 75, 100, 125, 150
25	10, 20, 30, 40, 50, 75, 100, 125, 150

Adjuster option

-	Without adjuster
AS	Adjuster on extension end
AT	Adjuster on retraction end
A	Adjuster on both ends
BS (1)	Absorber on extension end
BT (1)	Absorber on retraction end
B (1)	Absorber on both ends

Note 1) Options BS, BT and B are not available with the MXS6L series.
Note 2) Functional option is not available with the MXS□□L series.

Auto switch

-	Without auto switch

∗ For the applicable auto switch models, refer to the table below.

Number of auto switches

-	2 pcs.
S	1 pc.
n	"n" pcs.

Specifications

Specifications are the same as the standard type. Refer to page 4.

Applicable Auto Switches/Refer to "SMC Best Pneumatics" catalogue for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length ∗ (m)			Pre-wired connector	Applicable load	
					DC		AC	Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)			
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	**A93V**	**A93**	●	●	—	—	—	Relay, PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9NV**	**M9N**	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	○	○		
				2-wire		12 V		**M9BV**	**M9B**	●	●	○	○	—	
	Diagnostic indication (2-colour indication)			3-wire (NPN)		5 V,12 V		**M9NWV**	**M9NW**	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PWV**	**M9PW**	●	●	○	○		
				2-wire		12 V		**M9BWV**	**M9BW**	●	●	○	○	—	

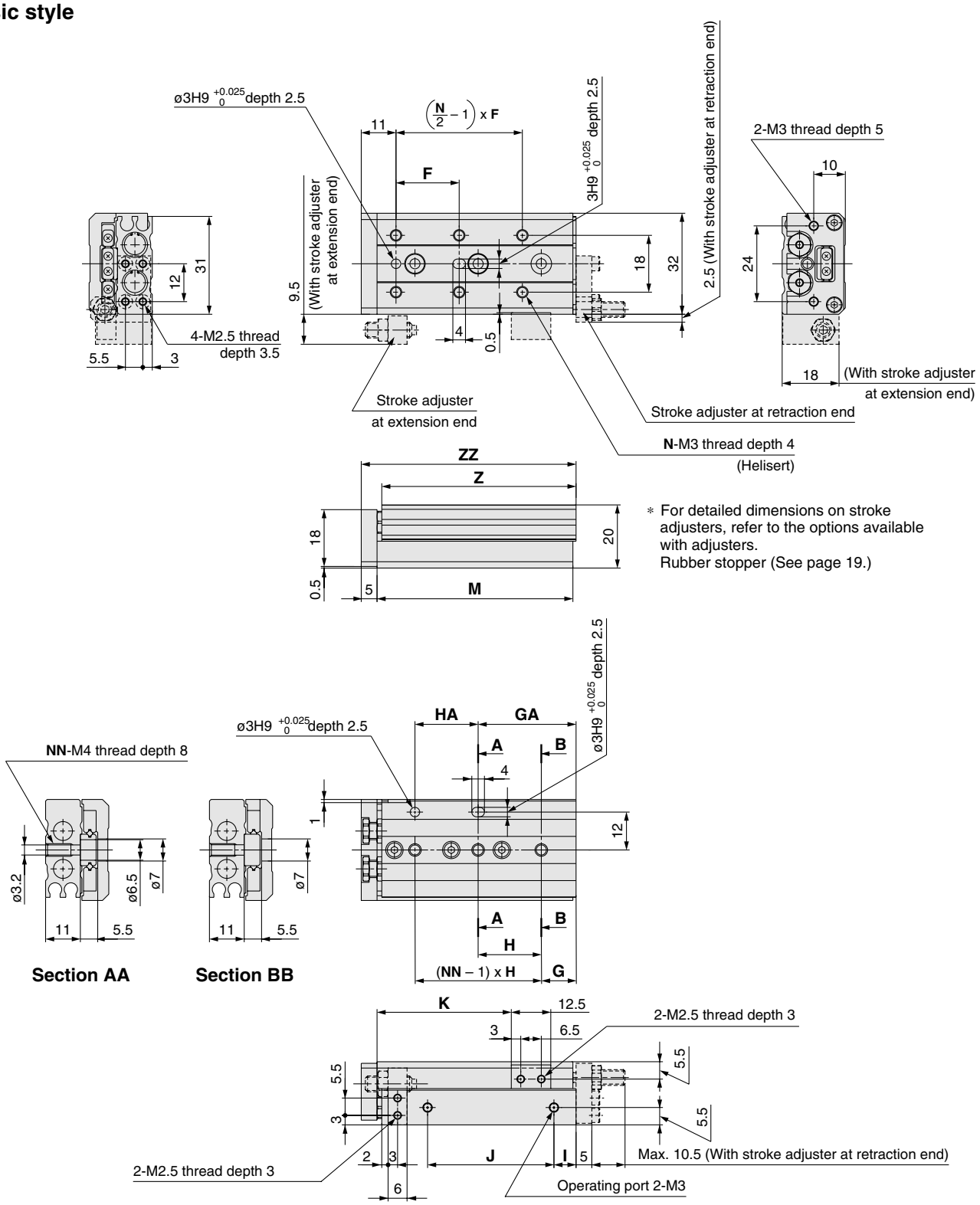
∗ Lead wire length symbols: 0.5 m ····· Nil (Example) M9N
3 m ····· L (Example) M9NL
5 m ····· Z (Example) M9NZ

∗ Solid state switches marked with "○" are produced upon receipt of order.

• Since there are additional applicable auto switches than are listed, refer to page 31.
• For details on auto switches with a pre-wired connector, refer to "SMC Best Pneumatics" catalogue.

Dimensions: MXS6L/Symmetric Type

Basic style

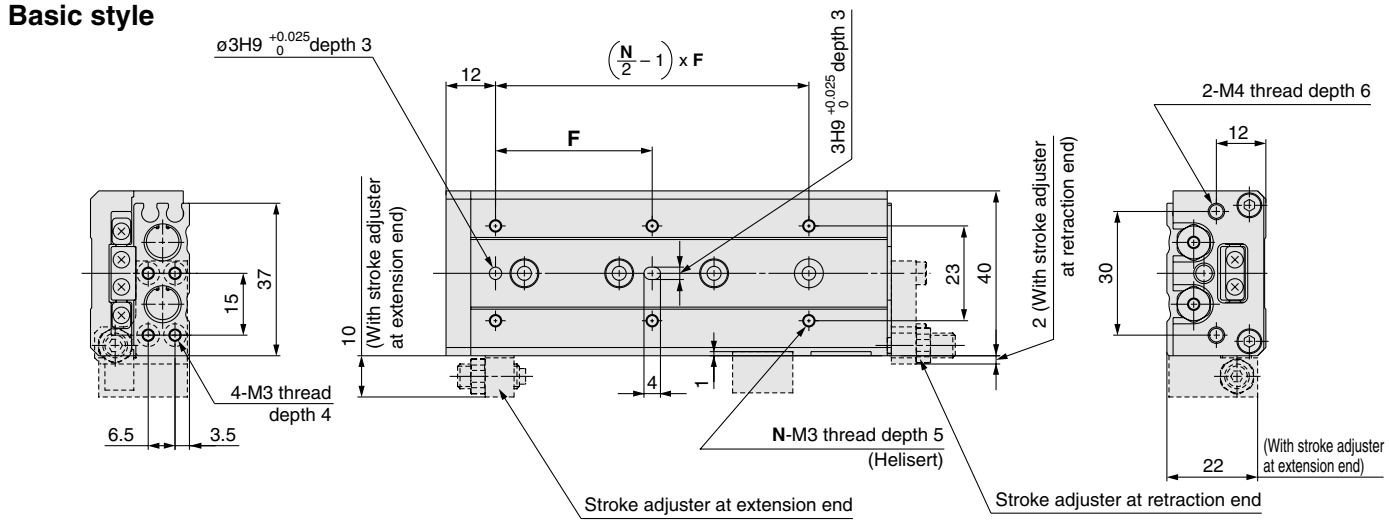


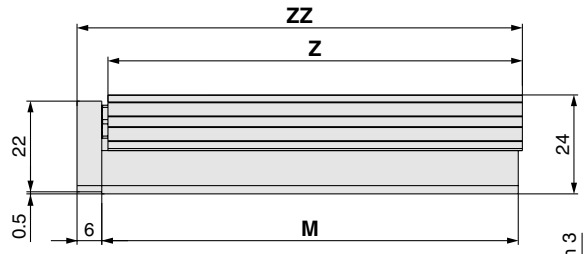
(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXS6L-10	20	4	6	25	2	11	20	10	17	22.5	42	41.5	48
MXS6L-20	30	4	6	35	2	21	20	10	27	32.5	52	51.5	58
MXS6L-30	20	6	11	20	3	31	20	7	40	42.5	62	61.5	68
MXS6L-40	28	6	13	30	3	43	30	19	50	52.5	84	83.5	90
MXS6L-50	38	6	17	24	4	41	48	25	60	62.5	100	99.5	106

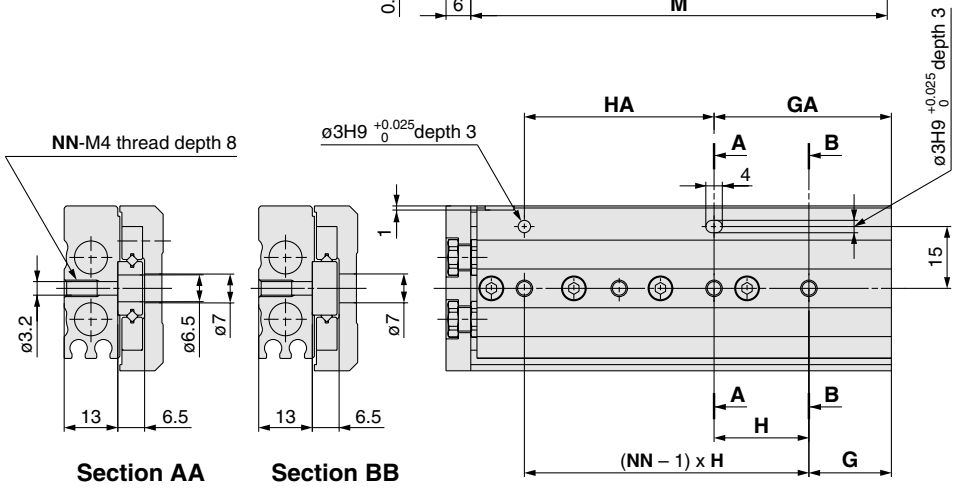
Dimensions: MXS8L/Symmetric Type

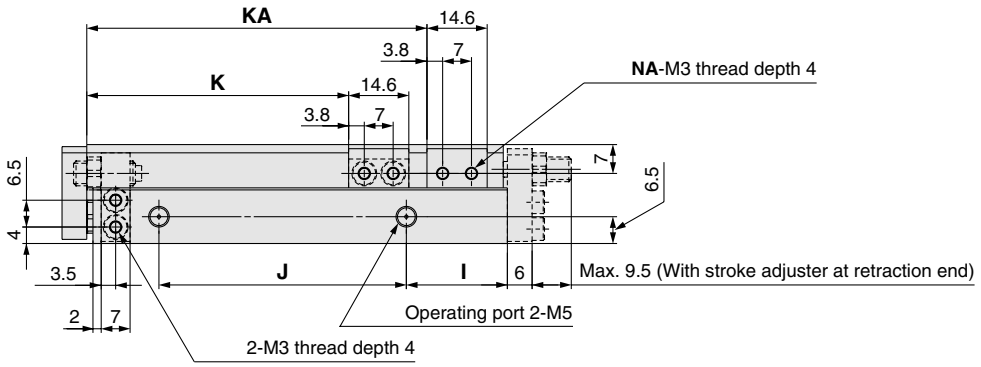
Basic style





* For detailed dimensions on stroke adjusters, refer to the options available with adjusters.
Rubber stopper (See page 19.)
Shock absorber (See page 20.)





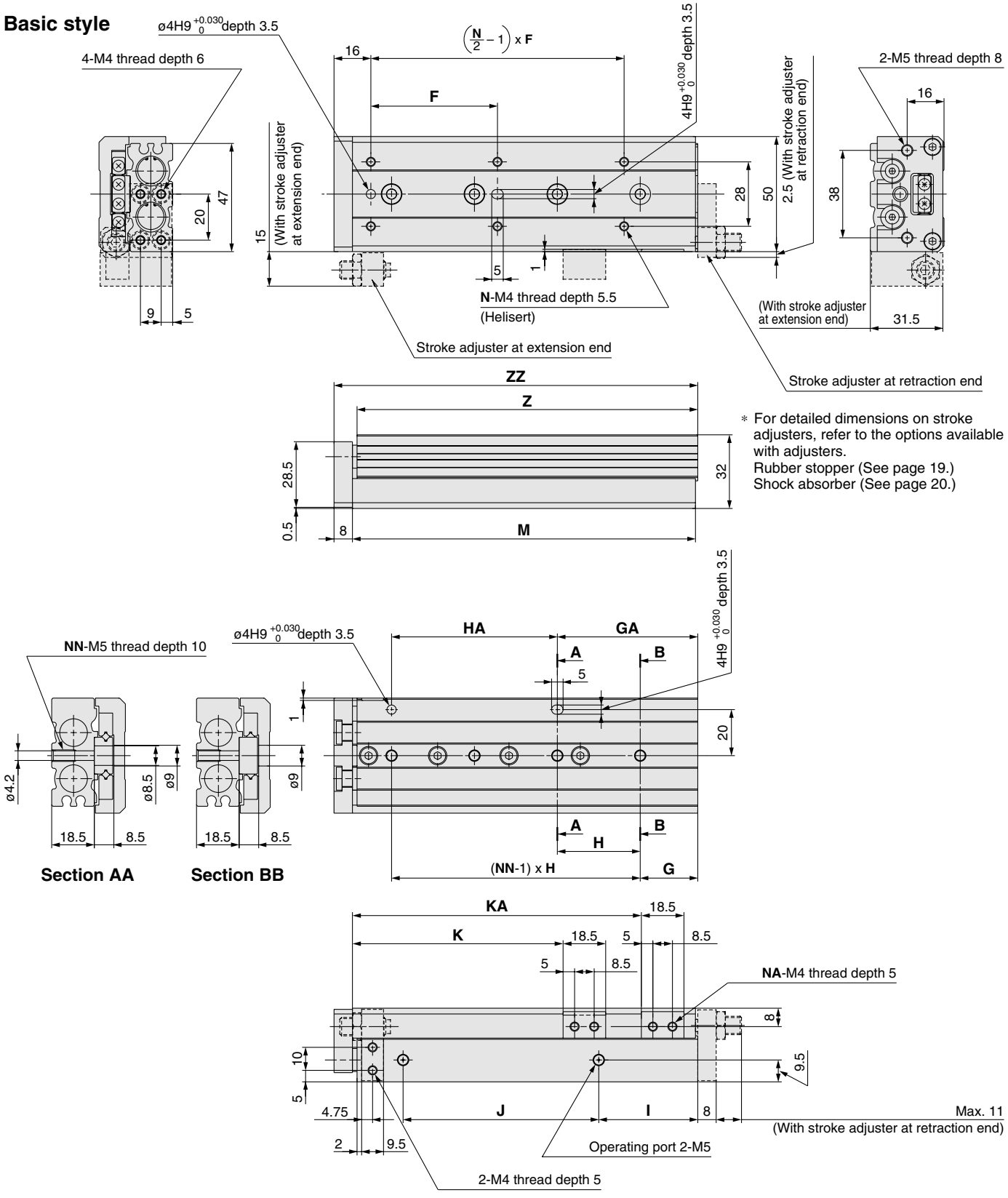
(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS8L-10	25	4	9	28	2	17	20	13	19.5	23.5	—	2	49	48.5	56
MXS8L-20	25	4	12	30	2	12	30	8.5	29	33.5	—	2	54	53.5	61
MXS8L-30	40	4	13	20	3	33	20	9.5	39	43.5	—	2	65	64.5	72
MXS8L-40	50	4	15	28	3	43	28	10.5	56	53.5	—	2	83	82.5	90
MXS8L-50	38	6	20	23	4	43	46	24.5	60	63.5	82.5	4	101	100.5	108
MXS8L-75	50	6	27	28	5	83	56	38.5	96	88.5	132.5	4	151	150.5	158

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS8 symmetrically on page 10.

Dimensions: MXS12L/Symmetric Type

Basic style



* For detailed dimensions on stroke adjusters, refer to the options available with adjusters.
Rubber stopper (See page 19.)
Shock absorber (See page 20.)

Max. 11
(With stroke adjuster at retraction end)

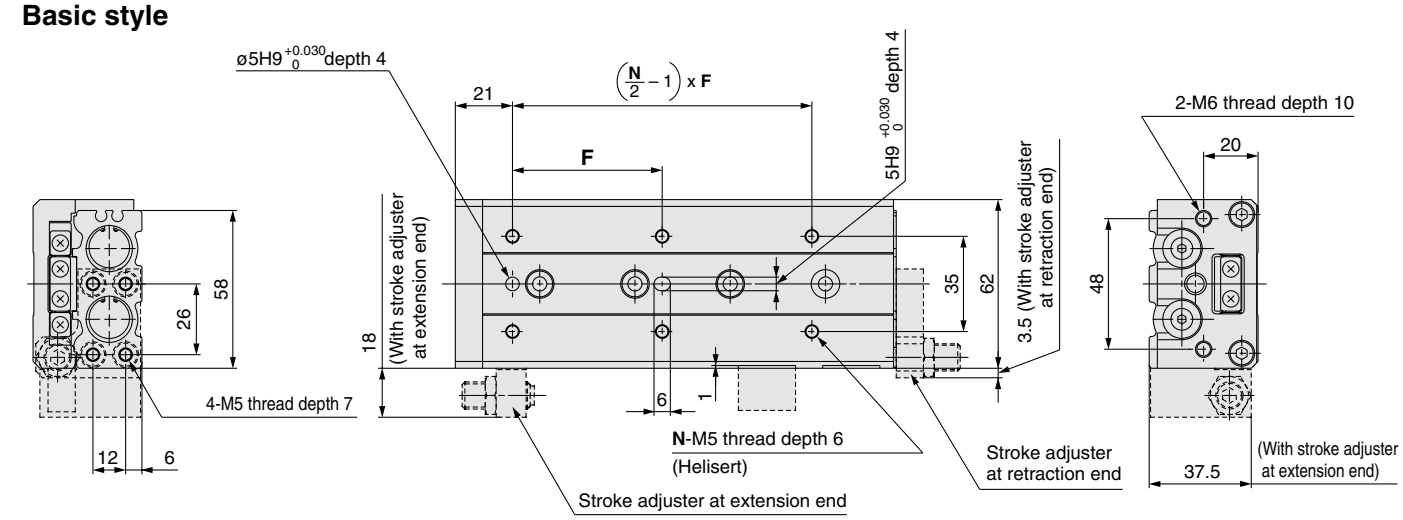
(mm)

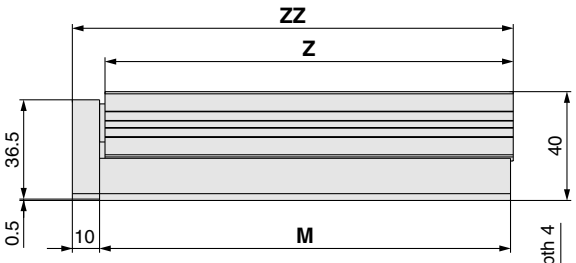
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS12L-10	35	4	15	40	2	15	40	10	40	26.5	—	2	71	70	80
MXS12L-20	35	4	15	40	2	15	40	10	40	36.5	—	2	71	70	80
MXS12L-30	35	4	15	40	2	15	40	10	40	46.5	—	2	71	70	80
MXS12L-40	50	4	17	25	3	42	25	10	52	56.5	—	2	83	82	92
MXS12L-50	35	6	15	36	3	51	36	22	60	66.5	—	2	103	102	112
MXS12L-75	55	6	25	36	4	61	72	43	85	91.5	125.5	4	149	148	158
MXS12L-100	65	6	35	38	5	111	76	52	130	116.5	179.5	4	203	202	212

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS12 symmetrically on page 12.

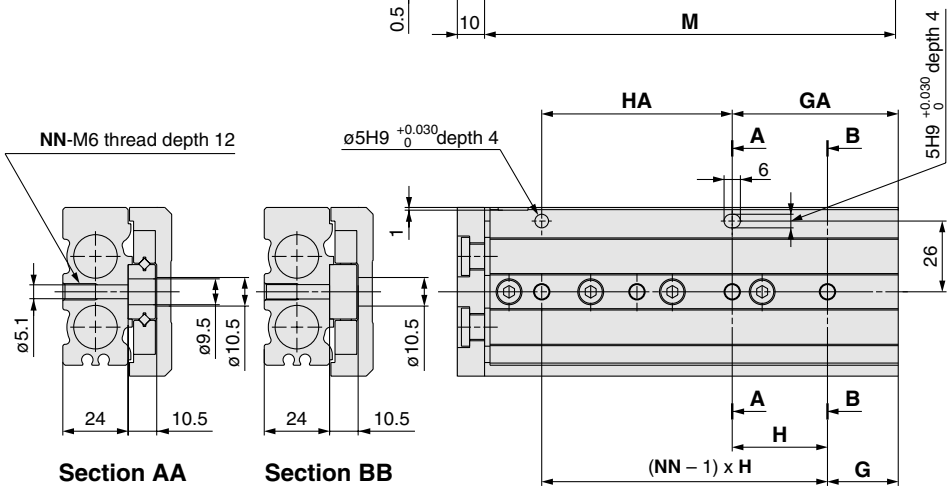
Dimensions: MXS16L/Symmetric Type

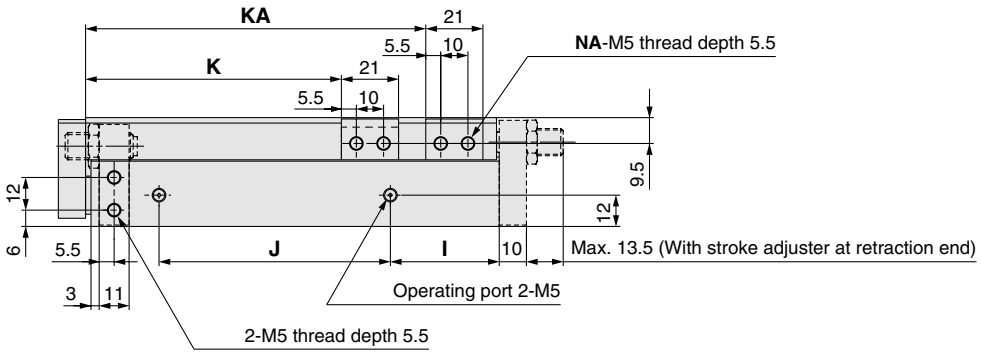
Basic style





* For detailed dimensions on stroke adjusters, refer to the options available with adjusters.
Rubber stopper (See page 19.)
Shock absorber (See page 20.)





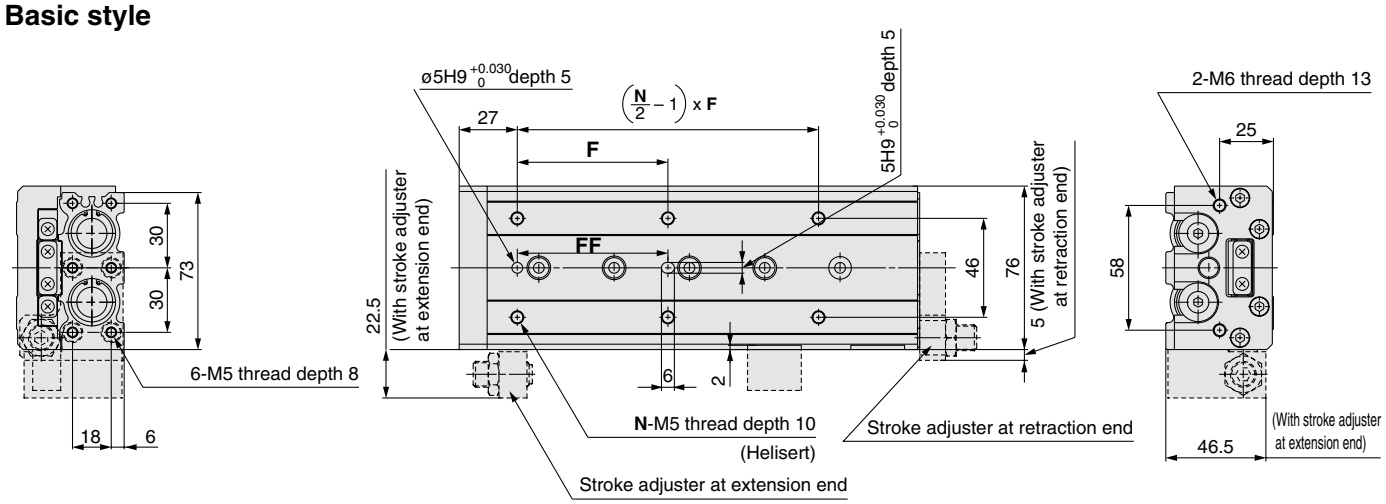
(mm)

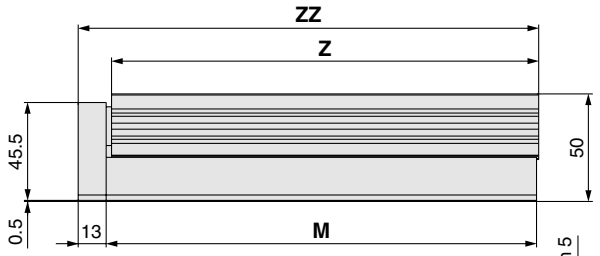
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS16L-10	35	4	16	40	2	16	40	10	40	29	—	2	76	75	87
MXS16L-20	35	4	16	40	2	16	40	10	40	39	—	2	76	75	87
MXS16L-30	35	4	16	40	2	16	40	10	40	49	—	2	76	75	87
MXS16L-40	40	4	16	50	2	16	50	10	50	59	—	2	86	85	97
MXS16L-50	30	6	21	30	3	51	30	15	60	69	—	2	101	100	112
MXS16L-75	55	6	26	35	4	61	70	40	85	94	125	4	151	150	162
MXS16L-100	65	6	39	35	5	109	70	55	118	119	173	4	199	198	210
MXS16L-125	70	8	19	35	7	159	70	68	155	144	223	4	249	248	260

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS16 symmetrically on page 14.

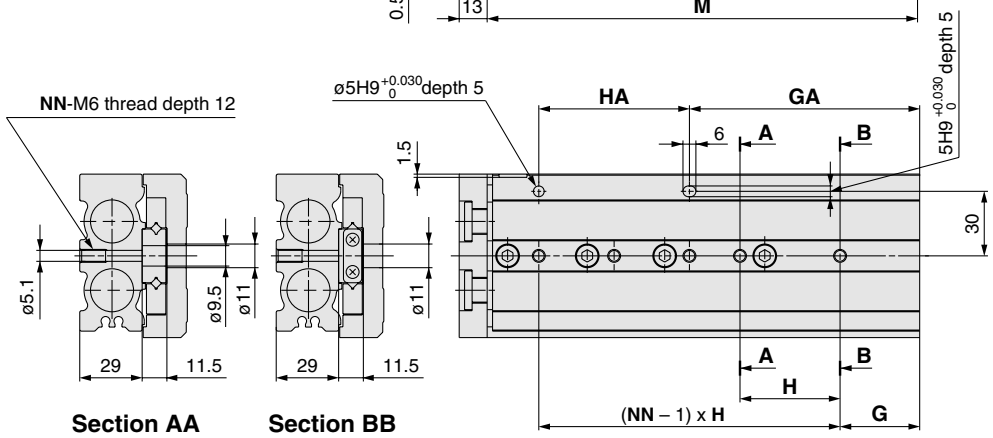
Dimensions: MXS20L/Symmetric Type

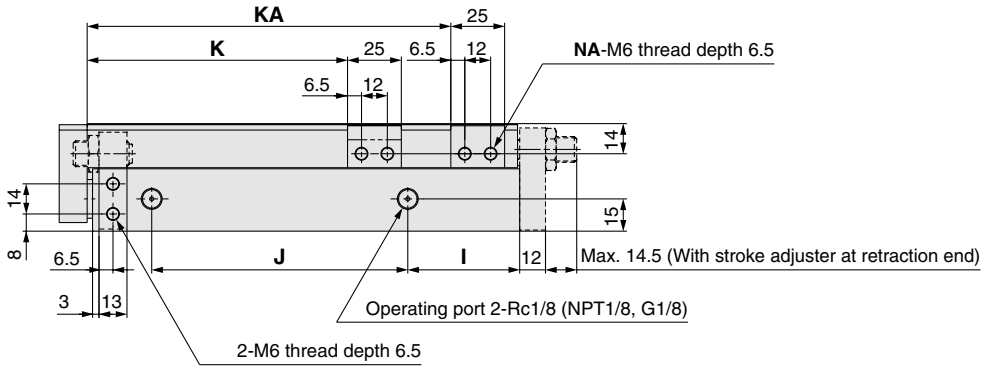
Basic style





* For detailed dimensions on stroke adjusters, refer to the options available with adjusters.
Rubber stopper (See page 19.)
Shock absorber (See page 20.)





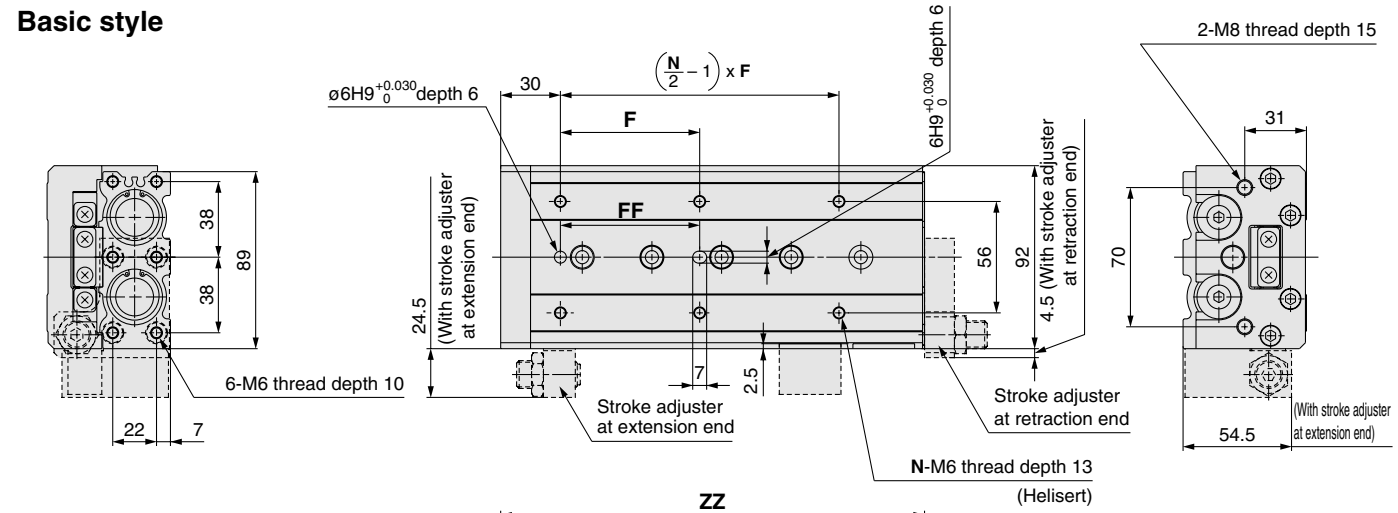
(mm)

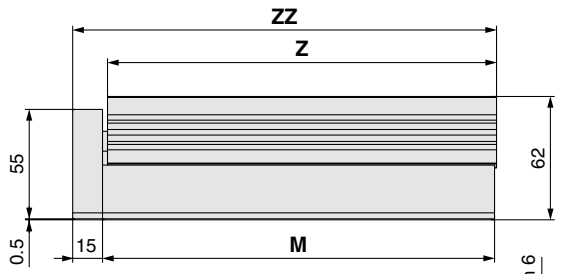
Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS20L-10	50	40	4	15	45	2	25	35	10	44	31	—	2	83	81.5	97
MXS20L-20	50	40	4	15	45	2	25	35	10	44	41	—	2	83	81.5	97
MXS20L-30	50	40	4	15	45	2	25	35	10	44	51	—	2	83	81.5	97
MXS20L-40	60	50	4	15	55	2	35	35	10	54	61	—	2	93	91.5	107
MXS20L-50	35	35	6	15	35	3	50	35	10	69	71	—	2	108	106.5	122
MXS20L-75	60	60	6	19	35	4	54	70	10	108	96	—	2	147	145.5	161
MXS20L-100	70	70	6	37	35	5	107	70	58	113	121	169	4	200	198.5	214
MXS20L-125	70	70	8	41	38	6	155	76	70	155	146	223	4	254	252.5	268
MXS20L-150	80	80	8	19	44	7	195	88	87	190	171	275	4	306	304.5	320

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS20 symmetrically on page 16.

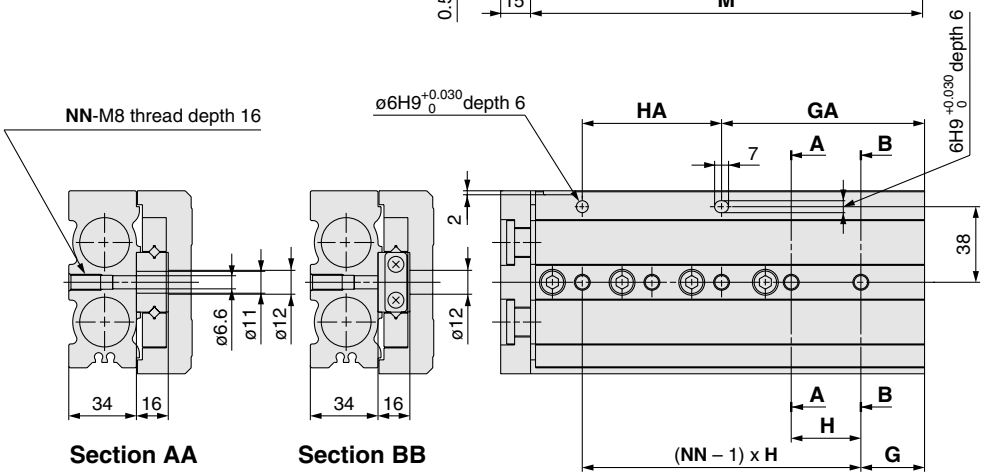
Dimensions: MXS25L/Symmetric Type

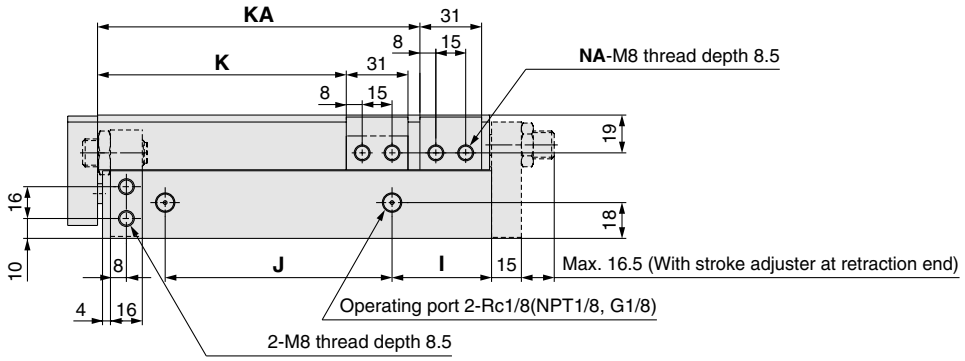
Basic style





* For detailed dimensions on stroke adjusters, refer to the options available with adjusters.
Rubber stopper (See page 19.)
Shock absorber (See page 20.)



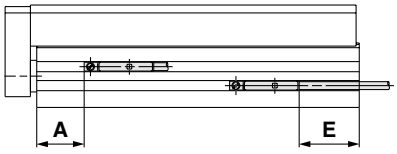


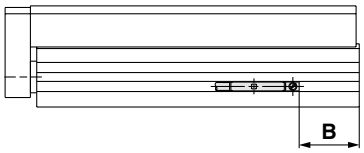
(mm)

Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS25L-10	50	40	4	22	45	2	22	45	12	47	35	—	2	92	90.5	108
MXS25L-20	50	40	4	22	45	2	22	45	12	47	45	—	2	92	90.5	108
MXS25L-30	50	40	4	22	45	2	22	45	12	47	55	—	2	92	90.5	108
MXS25L-40	60	50	4	22	55	2	22	55	12	57	65	—	2	102	100.5	118
MXS25L-50	35	35	6	20	35	3	55	35	12	70	75	—	2	115	113.5	131
MXS25L-75	60	60	6	26	35	4	61	70	33	90	100	—	2	156	154.5	172
MXS25L-100	70	70	6	32	35	5	102	70	50	114	125	162	4	197	195.5	213
MXS25L-125	75	75	8	40	38	6	154	76	67	155	150	218	4	255	253.5	271
MXS25L-150	80	80	8	30	40	7	190	80	82	180	175	258	4	295	293.5	311

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS25 symmetrically on page 18.

Proper Position for Auto Switch Mounting (Detection at stroke end)





Reed Switch: D-A90, D-A93, D-A96, D-A90V, D-A93V, D-A96V

Model	A	B Stroke									E Stroke								
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXS6	5.9	5.6	5.6	5.6	17.6	23.6	—	—	—	—	3.6 (1.1)	3.6 (1.1)	3.6 (1.1)	15.6 (13.1)	21.6 (19.1)	—	—	—	—
MXS8	7.6	10.9	5.9	6.9	14.9	22.9	47.9	—	—	—	8.9 (6.4)	3.9 (1.4)	4.9 (2.4)	12.9 (10.4)	20.9 (18.4)	45.9 (43.4)	—	—	—
MXS12	11.6	28.4	18.4	8.4	10.4	20.4	41.4	70.4	—	—	26.4 (23.9)	16.4 (13.9)	6.4 (3.9)	8.4 (5.9)	18.4 (15.9)	39.4 (36.9)	68.4 (65.9)	—	—
MXS16	16.3	28.7	18.7	8.7	8.7	13.7	38.7	61.7	86.7	—	26.7 (24.2)	16.7 (14.2)	6.7 (4.2)	6.7 (4.2)	11.7 (9.2)	36.7 (34.2)	59.7 (57.2)	84.7 (82.2)	—
MXS20	18.9	32.6	22.6	12.6	12.6	17.6	31.6	59.6	88.6	115.6	30.6 (28.1)	20.6 (18.1)	10.6 (8.1)	10.6 (8.1)	15.6 (13.1)	29.6 (27.1)	57.6 (55.1)	86.6 (84.1)	113.6 (111.1)
MXS25	23	37.5	27.5	17.5	17.5	20.5	36.5	52.5	85.5	100.5	35.5 (33)	25.5 (23)	15.5 (13)	15.5 (13)	18.5 (16)	34.5 (32)	50.5 (48)	83.5 (81)	98.5 (96)

∗ ( ): Denotes D-A93.

Solid State Switch: D-M9B, D-M9N, D-M9P, D-M9BW, D-M9NW, D-M9PW

Model	A	B Stroke									E Stroke								
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXS6	10	9.6	9.6	9.6	21.6	27.6	—	—	—	—	-0.4	-0.4	-0.4	11.6	17.5	—	—	—	—
MXS8	11.6	14.9	9.9	10.9	18.9	26.9	51.9	—	—	—	4.9	-0.1	0.9	8.9	16.9	41.9	—	—	—
MXS12	15.6	32.4	22.4	12.4	14.4	24.4	45.4	74.4	—	—	22.4	12.4	2.4	4.4	14.4	35.4	64.4	—	—
MXS16	20.3	32.7	22.7	12.7	12.7	17.7	42.7	65.7	90.7	—	22.7	12.7	2.7	2.7	7.7	32.7	55.7	80.7	—
MXS20	22.9	36.6	26.6	16.6	16.6	21.6	35.6	63.6	92.6	119.6	26.6	16.6	6.6	6.6	11.6	25.6	53.6	82.6	109.6
MXS25	27	41.5	31.5	21.5	21.5	24.5	40.5	56.5	89.5	104.5	31.5	21.5	11.5	11.5	14.5	30.5	46.5	79.5	94.5

Solid State Switch: D-M9BV, D-M9NV, D-M9PV, D-M9BWV, D-M9NWV, D-M9PWV

Model	A	B Stroke									E Stroke								
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXS6	10	9.6	9.6	9.6	21.6	27.6	—	—	—	—	1.6	1.6	1.6	13.6	19.6	—	—	—	—
MXS8	11.6	14.9	9.9	10.9	18.9	26.9	51.9	—	—	—	6.9	1.9	2.9	10.9	18.9	43.9	—	—	—
MXS12	15.6	32.4	22.4	12.4	14.4	24.4	45.4	74.4	—	—	24.4	14.4	4.4	6.4	16.4	37.4	66.4	—	—
MXS16	20.3	32.7	22.7	12.7	12.7	17.7	42.7	65.7	90.7	—	24.7	14.7	4.7	4.7	9.7	34.7	57.7	82.7	—
MXS20	22.9	36.6	26.6	16.6	16.6	21.6	35.6	63.6	92.6	119.6	28.6	18.6	8.6	8.6	13.6	27.6	55.6	84.6	111.6
MXS25	27	41.5	31.5	21.5	21.5	24.5	40.5	56.5	89.5	104.5	33.5	23.5	13.5	13.5	16.5	32.5	48.5	81.5	96.5

Auto Switch Mounting

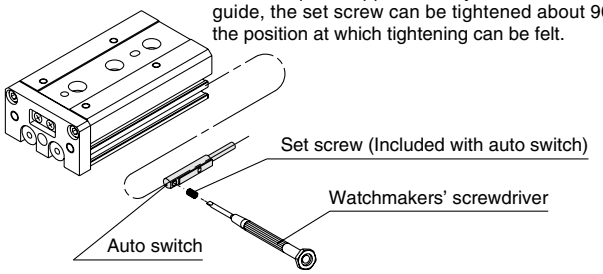
⚠ Caution

Auto Switch Mounting Tool

- When tightening the auto switch mounting screw (included with auto switch), use a watchmakers' screwdriver with an approximately 5 to 6 mm diameter handle.

Tightening Torque

- Use a torque of approximately 0.05 to 0.1 N·m. As a guide, the set screw can be tightened about 90° past the position at which tightening can be felt.



Operating Range

(mm)

Auto switch model	Applicable bore size (mm)					
	6	8	12	16	20	25
D-A9□/A9□V	4.5	5	6	7	8	8
D-M9□/M9□V	1.5	1.5	2.5	3	3	3
D-M9□W/M9□WV	2	2.5	3	4	6	6

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted. For detailed specifications, refer to "SMC Best Pneumatics" catalogue.

Type	Model	Electrical entry (direction)	Features
Reed switch	D-A90	Grommet (In-line)	Without indicator light
	D-A90V	Grommet (Perpendicular)	

∗ Normally closed (NC=b contact), solid state switch (D-F9G/F9H type) are also available.
For details, refer to "SMC Best Pneumatics" catalogue.

Series MXS
Made to Order

Contact SMC for detailed dimensions, specifications and delivery.

Made to Order

	Symbol
Anti-corrosive spec. for guide unit	-X42

MXS | Standard part no. | -X42

-X42: Anti-corrosive spec. for guide unit

The rail and guide block undergo an anti-corrosive treatment.

Specifications

Model	Anti-corrosive specification type
Bore size (mm)	6, 8, 12, 16, 20, 25
Fluid	Air
Surface treatment	Special anti-corrosive treatment Note 2)

Note 1) Dimensions are the same as the standard type.
Note 2) The rail and guide are black due to the special anti-corrosive treatment.

Series MXS
Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of **"Caution", "Warning"** or **"Danger"**. To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

■ Explanation of the labels

Labels	Explanation of the labels
⚠ **Danger**	In extreme conditions, there is a possible result of serious injury or loss of life.
⚠ **Warning**	Operator error could result in serious injury or loss of life.
⚠ **Caution**	Operator error could result in injury or equipment damage.

Note 1) ISO 4414: Pneumatic fluid power – General rules relating to systems
Note 2) JIS B 8370: General Rules for Pneumatic Equipment
Note 3) Injury indicates light wounds, burns and electrical shocks that do not require hospitalisation or hospital visits for long-term medical treatment.
Note 4) Equipment damage refers to extensive damage to the equipment and surrounding devices.

■ Selection/Handling/Applications

1. The compatibility of the pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.
Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or post analysis and/or tests to meet the specific requirements. The expected performance and safety assurance are the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalogue information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.
Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.
1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driver objects have been confirmed.
2. When equipment is removed, confirm that safety process as mentioned above. Turn off the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is restarted, take measures to prevent quick extension of a cylinder piston rod, etc.

4. Contact SMC if the product will be used in any of the following conditions:
1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.
4. If the products are used in an interlock circuit, prepare a double interlock style circuit with a mechanical protection function for the prevention of a breakdown. And, examine the devices periodically if they function normally or not.

■ Exemption from liability

1. SMC, its officers and employees shall be exempted from liability for any loss or damage arising out of earthquakes or fire, action by a third person, accidents, customer error with or without intention, product misuse, and any other damages caused by abnormal operating conditions.
2. SMC, its officers and employees shall be exempted from liability for any direct or indirect loss or damage, including consequential loss or damage, loss of profits, or loss of chance, claims, demands, proceedings, costs, expenses, awards, judgments and any other liability whatsoever including legal costs and expenses, which may be suffered or incurred, whether in tort (including negligence), contract, breach of statutory duty, equity or otherwise.
3. SMC is exempted from liability for any damages caused by operations not contained in the catalogues and/or instruction manuals, and operations outside of the specification range.
4. SMC is exempted from liability for any loss or damage whatsoever caused by malfunctions of its products when combined with other devices or software.

Series MXS
Specific Product Precautions 1

Be sure to read this before handling. For Safety Instructions, Actuators Precaution, Auto Switches Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A)

Selection

⚠ Caution

1. Operate a load within the range of the operating limits.

Operate loads within the range of the operating limits.

When the actuator is used outside the operating limits, excentric loads on the guide will be excessive and this will cause vibration on the guide, in accuracy and shortened life.

2. If intermediate stops by external stopper is done, avoid ejection.

If lurching occurs, damage can result. When making an intermediate stop with an external stopper to be followed by continued forward movement, first supply pressure to momentarily reverse the table, then retract the intermediate stopper, and finally apply pressure to the opposite port to operate the table again.

3. Do not use it in such a way that excessive external force or impact force could work on it.

This could result in damage.

Mounting

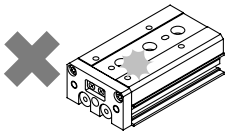
⚠ Caution

1. Do not scratch or dent the mounting side of the body, table or end plate.

The damage will result in a decrease in parallelism, vibration of the guide or an increase in moving part resistance.

2. Do not scratch or dent on the forward side of the rail or guide.

This could result in looseness, increased operating resistance, etc.



3. Do not apply excessive power and load when work is mounted.

If an external force more than the allowable moment is applied, looseness of the guide unit or increased operating resistance could take place.

4. Flatness of mounting surface should be 0.02 mm or less.

Poor parallelism of the workpiece mounted on the air slide table, the base, and other parts can cause vibration in the guide unit and increased operating resistance, etc.

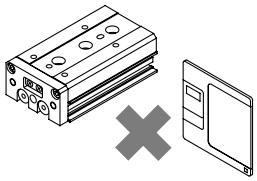
5. Select the proper connection with the load which has external support and/or guide mechanism on the outside, and align it properly.

6. Avoid contact with the air slide table during operation.

Hands, etc. may get caught in the stroke adjuster. Install a cover as a safety measure if there are instances to be near the slide table during operation.

7. Keep away from objects which are influenced by magnets.

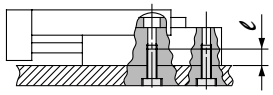
Since an air slide table has magnets built-in, do not allow close contact with magnetic disks, magnetic cards or magnetic tapes. Data may be erased.



8. Do not attach magnets to the table section.

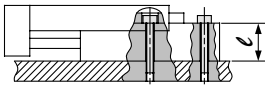
Since the table is constructed with a magnetic substance, it becomes magnetised when magnets, etc. are attached to it. This may cause malfunction of auto switches, etc.

1. Lateral mounting (Body tapped)



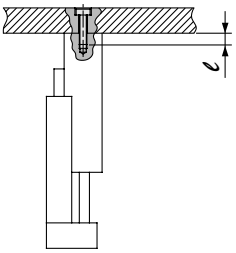
Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXS6	M4	2.1	8
MXS8	M4	2.1	8
MXS12	M5	4.4	10
MXS16	M6	7.4	12
MXS20	M6	7.4	12
MXS25	M8	18	16

2. Lateral mounting (Through-hole)



Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXS6	M3	1.2	11
MXS8	M3	1.2	13
MXS12	M4	2.8	18.5
MXS16	M5	5.7	24
MXS20	M5	5.7	29
MXS25	M6	10	34

3. Vertical mounting (Body tapped)



Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXS6	M2.5	0.5	3.5
MXS8	M3	0.9	4
MXS12	M4	2.1	6
MXS16	M5	4.4	7
MXS20	M5	4.4	8
MXS25	M6	7.4	10

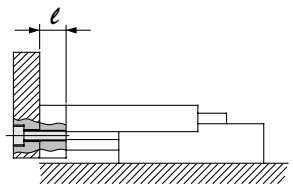
Series MXS
Specific Product Precautions 2

Be sure to read this before handling. For Safety Instructions, Actuators Precaution, Auto Switches Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A)

Mounting

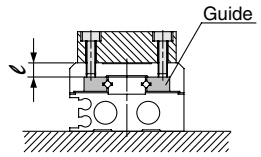
⚠ Caution

1. Front mounting



Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXS6	M3	0.9	5
MXS8	M4	2.1	6
MXS12	M5	4.4	8
MXS16	M6	7.4	10
MXS20	M6	7.4	13
MXS25	M8	18	15

2. Top mounting



⚠ Caution To prevent the workpiece holding bolts from touching the guide block, use bolts that are at least 0.5 mm shorter than the maximum screw-in depth. If longer bolts are used, they can touch the guide and cause a malfunction.

Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXS6	M3	0.9	4
MXS8	M3	0.9	5
MXS12	M4	2.1	5.5
MXS16	M5	4.4	6
MXS20	M5	4.4	10
MXS25	M6	7.4	13

1. The positioning hole on the table and the positioning hole at the bottom of the body do not have the same centre. Use these holes during reinstallation after the table has been removed for the maintenance of an identical product.

Operating Environment

⚠ Caution

1. Do not use in an environment, where the product could be exposed to liquids such as cutting oil, etc.

Using in an environment where the product could be exposed to cutting oil, coolant, oil, etc. could result in looseness, increased operating resistance, air leakage, etc.

2. Do not use in an environment, where the product could be exposed directly to foreign materials such as powder dust, blown dust, cutting chips, spatter, etc.

This could result in looseness and increased operating resistance, and air leakage, etc.
Contact us regarding use in this kind of environment.

3. Do not use in direct sunlight.

4. When there are heat sources in the surrounding area, block them off.

When there are heat sources in the surrounding area, radiated heat may cause the product's temperature to rise and exceed the operating temperature range. Block off the heat with a cover, etc.

5. Do not subject it to excessive vibration and/or impact.

Contact us regarding use in this kind of environment, since this can cause damage or a malfunction.

Caution on Handling Adjuster Option

Stroke Adjuster

⚠ Caution

1. Do not replace with the bolt other than the original adjusting bolt.

This could result in looseness and damage due to impact forces, etc.

2. Refer to the table below for the lock nut tightening torque.

Insufficient torque will cause a decrease in the positioning accuracy.

Model	Tightening torque (N·m)
MXS6	3.0
MXS8	5.0
MXS12	12.5
MXS16	25.0
MXS20	43.0
MXS25	69.0

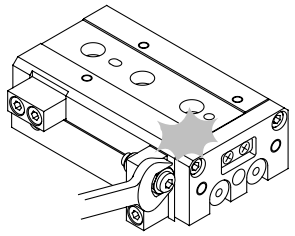
Caution on Handling Adjuster Option

Stroke Adjuster

⚠ Caution

3. When stroke adjuster is adjusted, do not hit the table with a wrench, etc.

This could result in looseness.



With Shock Absorber

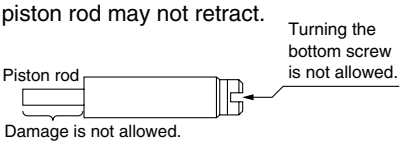
⚠ Caution

1. Do not rotate the set screw on the bottom of shock absorber.

This is not an adjusting screw. Turning it could cause oil leakage.

2. Do not scratch the exposed portion of the piston rod.

Durability could be degraded and the piston rod may not retract.



3. Shock absorber is considered a consumable component. When energy absorption has decreased, replace it.

Applicable size	Shock absorber model
MXS8	RB0805
MXS12	RB0806
MXS16	RB1007
MXS20	RB1411
MXS25	RB1412

4. Refer to the table below for the tightening torque of the lock nut for the shock absorber.

Model	Tightening torque (N·m)
MXS8 **MXS12**	1.67
MXS16	3.14
MXS20 **MXS25**	10.8

Back page 3

Specific Product Precautions 3

Be sure to read this before handling. For Safety Instructions, Actuators Precaution, Auto Switches Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A)

Caution on Mounting Adjuster Option

Rubber Stopper

⚠ Caution

1. Use caution because the lengths of the mounting bolts for the body and the table are different from each other for some models.

The shock absorber at the extension end (AS) of the MXS6, 8 and 12 has different length hexagon socket head cap screws on the body mounting section and on the table mounting section. Use sufficient care when mounting.

If assembled by making an error in length, it could cause looseness or lead to malfunction.

2. Follow the table below for tightening torque of mounting bolts.

Insufficient torque will cause a decrease in the positioning accuracy and lead to malfunction.

Model	Stroke adjuster at extension end (AS)				Stroke adjuster at retraction end (AT)	
	Body mounting section		Table mounting section			
	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)
MXS6	M2.5 x 10	0.5	M2.5 x 8	0.5	M2.5 x 8	0.5
MXS8	M3 x 12	0.9	M3 x 10	0.9	M3 x 10	0.9
MXS12	M4 x 15	2.1	M4 x 12	2.1	M4 x 8	2.1
MXS16	M5 x 18	4.4	M5 x 18	4.4	M5 x 10	4.4
MXS20	M6 x 20	7.0	M6 x 20	7.0	M5 x 12	4.4
MXS25	M8 x 25	18.0	M8 x 25	18.0	M6 x 16	7.0

Shock Absorber

⚠ Caution

1. Use caution because the lengths of the mounting bolts for the body and the table are different from each other for some models.

The shock absorber at the retraction end (BT) has different length hexagon socket head cap screws on the body mounting section and on the table mounting section. Use sufficient care when mounting.

If assembled by making an error in length, it could cause looseness or lead to malfunction.

2. Follow the table below for tightening torque of mounting bolts.

Insufficient torque will cause a decrease in the positioning accuracy and lead to malfunction.

Model	Shock absorber at extension end (BS)				Shock absorber at retraction end (BT)			
	Body mounting section		Table mounting section		Body mounting section		Table mounting section	
	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)
MXS8	M3 x 16	0.9	M3 x 16	0.9	M3 x 12	0.9	M3 x 16	0.9
MXS12	M4 x 15	2.1	M4 x 15	2.1	M4 x 8	2.1	M4 x 15	2.1
MXS16	M5 x 18	4.4	M5 x 18	4.4	M5 x 10	4.4	M5 x 18	4.4
MXS20	M6 x 25	7.0	M6 x 25	7.0	M5 x 12	4.4	M6 x 25	7.0
MXS25	M8 x 25	18.0	M8 x 25	18.0	M6 x 16	7.0	M8 x 25	18.0

Series MXS
Specific Product Precautions 4

Be sure to read this before handling. For Safety Instructions, Actuators Precaution, Auto Switches Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A)

Caution on Handling Functional Option

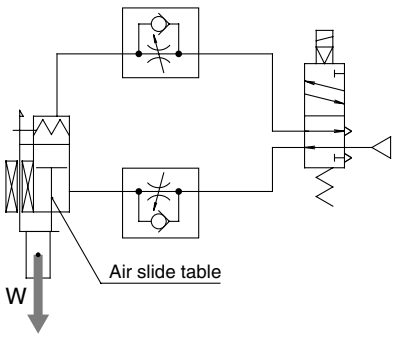
With End Lock

⚠ Caution

1. Use 2 position, 4 or 5 port solenoid valves.

A malfunction may occur with a control circuit that exhausts from both ports, such as exhaust centre 3 position valves.

Recommended pneumatic circuit



2. Be sure to use meter-out speed control valves.

If used with meter-in speed control or without a speed controller, it may result in malfunction.

3. When releasing the end lock manually, be sure that air pressure is released.

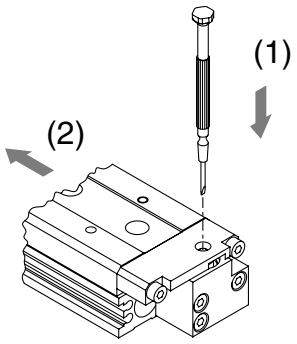
If the end lock is unlocked while the air pressure still remains, it will lead to damage of the workpiece, etc. due to unexpected lurching.

How to Unlock the End Lock

∗ Before proceeding, make sure that there is no residual air pressure.

(1) Push down the lock piston pin.

(2) Slide the table forward.

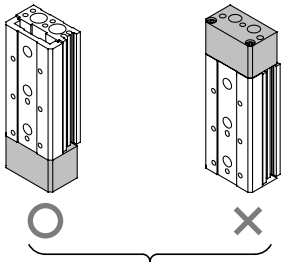


With Buffer Mechanism

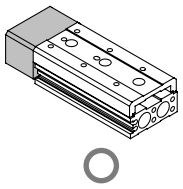
⚠ Caution

1. When using the air slide table with buffer, it must be oriented as shown in the sketch below.

In horizontal operation, the buffer may travel the stroke length and activate the auto switch depending on the load and the speed. Therefore, adjust the speed according to the load.

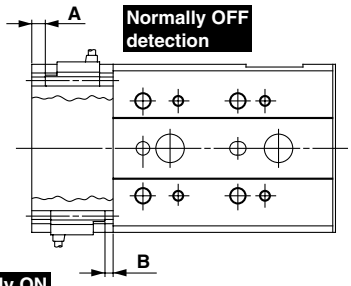


Vertical use



Horizontal use

2. Auto switch with buffer function: For the proper mounting positions for detection at stroke end, refer to the following table.



∗ Adjust the switch position according to load and speed.

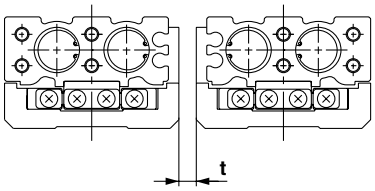
(mm)

Model	A	B
MXS6	2	3
MXS8	2.5	
MXS12	4	
MXS16	5	
MXS20	5.5	
MXS25	10	

Caution on Handling Symmetric Type

1. Maintain a longer distance than prescribed below if standard style and symmetric style are used side by side.

If the space is insufficient, it may cause auto switches to malfunction.



(mm)

Model	Mounting pitch: **t**
MXS6	5
MXS8	10
MXS12	10
MXS16	10
MXS20	15
MXS25	15

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